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Native American Cultural Resources on Pahute and Rainier Masas, NTS, {DOE/NV/90NV10845-40) Ethnographic Information on Native American Groups

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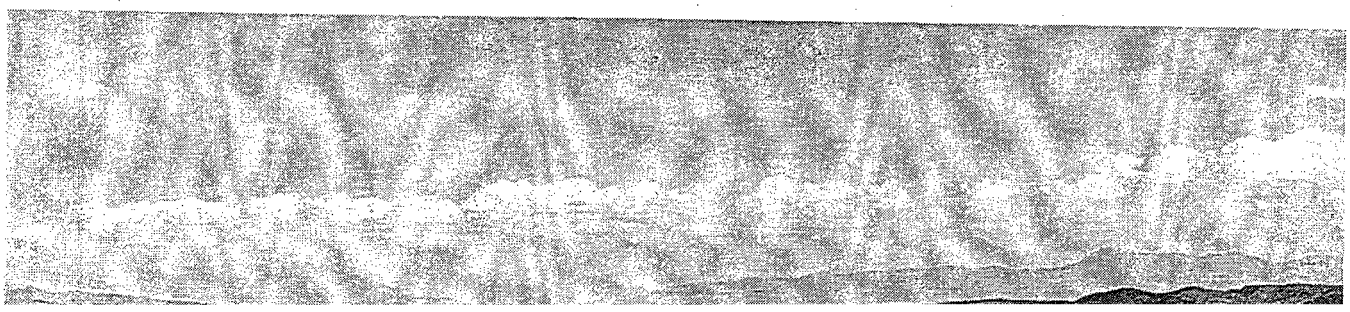

ACRONYMS

ACHP	Advisory Council on Historic Preservation
AIRFA	American Indian Religious Freedom Act
CRIT	Colorado River Indian Tribes
CICS	Cumulative Index of Cultural Significance
DRI	Desert Research Institute
DOE	Department of Energy
DOE/NV	DOE Nevada Operations Office
EICS	Ethnic Index of Cultural Significance
ETS	Egalitarian Triage Score
ICS	Index of Cultural Significance
LVIC	Las Vegas Indian Center
NAGPRA	Native American Graves Protection and Repatriation Act
NHPA	National Historic Preservation Act
NTS	Nevada Test Site
OEA	DOE/NV, Office of External Affairs
OTCR	Official Tribal Contact Representative
PITU	Paiute Indian Tribe of Utah
SAS	Spatial Area Significance Score
SHPO	State Historic Preservation Officer
WTS	Weighted Triage Score
YMP	Yucca Mountain Project

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NATIVE AMERICAN CULTURAL RESOURCES ON PAHUTE AND RAINIER MESAS, NEVADA TEST SITE

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Vivienne Jake, Kaibab Paiute Indian Tribe
Lucille Jake, Kaibab Paiute Indian Tribe
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Lawanda Laffoon, Colorado River Indian Tribes
Matthew Leivas, Chemehuevi Indian Tribe
Mary Lou Brown, Colorado River Indian Tribes
Charles Lynch, Pahrump Paiute Tribe
Cynthia Lynch, Pahrump Paiute Tribe
Marion McFee, Paiute Indian Tribe of Utah (Shivwits Band)
Calvin Meyers, Moapa Paiute Tribe
Daniel Miller, Fort Independence Indian Tribe
Vernon Miller, Fort Independence Indian Tribe
Tracey Miller, Moapa Paiute Tribe
Bertha Moose, Big Pine Indian Tribe
Neddeen Naylor, Lone Pine Indian Tribe
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Merrill Wall, Paiute Indian Tribe of Utah (Shivwits Band)
Kenneth Watterson, Timbisha Shoshone Tribe
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CHAPTER ONE

INTRODUCTION

Indian people have been invited by the Department of Energy - Nevada Operations Office (DOE/NV) to identify and make recommendations about cultural resources that are potentially impacted by the underground testing activities on Pahute and Rainier Mesas, on the Nevada Test Site (NTS). This study is being conducted in compliance with the American Indian Religious Freedom Act (AIRFA) of 1978 (PL 95-341) and in keeping with Department of Energy (DOE) directives to be responsive to this and other laws regarding cultural resources located on DOE facilities (Pelletier 1990).

Seventeen American Indian tribes having traditional prehistoric or historic ties to lands within and in the vicinity of the NTS study area (Stoffle, Olmsted, and Evans 1988) were invited to participate in this study. Their participation was in keeping with a Native American consultation process that has been developed over a period of seventeen years and has involved more than sixty tribes. The history and cultural implications of this consultation plan was published by Stoffle and Evans (1990). The version of this consultation plan that was specially adapted to this project was published and distributed to the involved tribes as part of *NTS American Indian Religious Freedom Act Compliance Program, Complying with AIRFA: A Literature Review and Evaluation* (Pippin ed. 1991).

This study builds upon previous Native American cultural resource consultation studies conducted on the Nevada Test Site (Stoffle 1987; Stoffle and Evans 1988, 1992; Stoffle, Evans and Halmo 1989; Stoffle, Evans, Halmo, Niles, and O'Farrell 1989; Stoffle, Evans and Harshbarger 1989; Stoffle, Halmo, Evans and Olmsted 1990; Stoffle, Halmo, Olmsted and Evans 1990; Stoffle, Olmsted, and Evans 1990). This is a process called *tiering* which is recommended as part of environmental assessment studies. One implication of tiering on past studies is that this study has elements that previous studies did not contain and lacks elements that have been accomplished. For example, a previous study worked with sixteen American

Involved Indian Tribes

Seventeen American Indian tribes were invited to participate in the NTS AIRFA consultation. These participating tribes were identified because they had prehistoric or historic cultural resource ties to the study area. The tribes belong to three cultural (or ethnic) groups: the Owens Valley Paiute, the Western Shoshone, and the Southern Paiute. There are other tribes who belong to these ethnic groups, but these tribes have the most direct cultural ties to the study area. These tribes, the state where they are located, and the ethnic group they represent, are as follows:

Southern Paiute Ethnic Group
- Kaibab Paiute Tribe, Arizona
- Paiute Indian Tribe of Utah
- Moapa Paiute Tribe, Nevada
- Las Vegas Paiute Indian Colony, Nevada
- Pahrump Paiute Tribe, Nevada
- Chemehuevi Tribe, California
- Colorado River Indian Tribes, Arizona

Western Shoshone Ethnic Group
- Duckwater Shoshone Tribe, Nevada
- Ely Shoshone Tribe, Nevada
- Yomba Shoshone Tribe, Nevada
- Timbisha Shoshone Tribe, California

Owens Valley Ethnic Group
- Benton Paiute Indian Tribe, California
- Bishop Paiute Indian Tribe, California
- Big Pine Indian Tribe, California
- Fort Independence Indian Tribe, California
- Lone Pine Indian Tribe, California

Las Vegas Urban Ethnic Group
- Las Vegas Indian Center, Nevada

The procedure by which these tribes were identified for earlier cultural resource studies on the NTS is discussed in Stoffle and Evans (1988, 1992) and selected for this study in Pippin (1991).

The seventeen invited tribes participated in a variety of ways. The core of this report is based on visits by tribal representatives to portions of the study area to identify cultural resources. Most but not all tribes participated in these studies. Tribes also participated by providing a list of adult tribal members so a cultural resource survey could be mailed to them. Many of the same tribes, and one new tribe, participated in this mail survey. Tribes have been invited in meetings to discuss the research design and the progress of the research. Most tribes

participated in these meetings. All tribes were asked to review draft copies of the study design (Pippin ed. 1991) and a special mitigation study for a traditional site. Many tribes responded to this additional opportunity to participate. Finally, the information collection and recommendation portions of the study culminated in two mitigation meetings held in the summer and fall of 1993. All tribes had the opportunity to participate in these meetings. Tribal participation has been extensive, and nonparticipation in one activity did not indicate a lack of interest in the study or its conclusions. The methodology preceding the study chapters indicates which tribes participated in that particular portion of the research. All three ethnic groups have had representatives at each study event.

Summary of Study Efforts

This summary of findings focuses on outlining what type of information has been collected. There have been three major information collecting efforts. They occurred as follows:

*	ethnobiology study	June 3 to June 18, 1992
*	ethnoarchaeology study	August 11 to August 27, 1992
*	mail survey	February 25 to April 30, 1993

The ethnobiology study involved 32 people who provided 246 interviews about plants, 50 interviews about animals, and 7 interviews about sacred areas. The ethnoarchaeology study involved 29 people who provided 157 interviews about archaeology sites. The mail survey involved 266 people who responded to the survey. In total, this study is based on 726 interviews with 327 Indian people.

The following chapters are an effort at presenting the general story that these Indian people were trying to tell. By using the term *story* it is implied that the Indian representatives

This effort was intended to reach the Indian people who did not attend the NTS site visits. The responses of these tribal members define the broadest perspectives on cultural resource use, value, and mitigation. Chapter Eight summarizes the patterns of mitigation recommendations provided by the tribal representatives. Included in this chapter are the official tribal government recommendations that were provided at meetings on the NTS.

Some Indian Voices

This portion of the introduction is designed to present what some Indian representatives said about the places, the plants, the animals, and their hopes for the future of these important cultural resources. The following quotes are taken directly from interviews that were taped while answers were being written on the survey form. Quotes were chosen because they seem particularly interesting. These voices represent the speakers themselves and are not intended as a set of conclusions for the whole study.

Animal Interview

"...leave the coyote alone and leave it in it's own natural environment. Coyote creates a balance of everything in this world and it is a very highly sacred animal. They should live out in the wild...in its own natural ways, and it should not be disturbed by man because coyote is a messenger. And although sometimes that message might not be a good one, might not be positive, nevertheless the coyote is very important and is a part of the creation. He is a part of traditional dancing and makes us aware of his presence and of the importance of the part that he plays in our lives."

Plant Interview

"...when you disturb a plant or when you remove a plant like they would in construction, you're creating an imbalance, and we're in so much trouble now because there is so much imbalance. And you've got a balance in a variety of plants right here--there's cactus, there's pine trees, there's cedar trees, there's sage brush...and a whole variety of plants that you see just in this one setting...and when you do--after you've asked permission, you've prayed to the creator that you want to use this for whatever purpose that you're going to use it for--say Mother and I would want to use it for medicinal purposes, so she would send me out and I would give thanks, and I would give it something, like we were doing today, I don't know if we are going to be picking off of the brush or taking some with us...but assume we have already asked permission, just a while ago you saw us...and you would take from a certain part of the plant, and usually it's from the side where the sun is hitting in the morning, so it would be kind of like here, or under here, you know so that you don't completely destroy the plant and make it look odd..you'll know where to pick from. Then of course as you're doing that you are pruning it, you are taking the dead branches off...so that it will look nice..and be fuller. But that's the main reason why we are against the destruction...through, you know, roads and stuff, roads are important too I guess but as long as there isn't a mass destruction of plants because like she says for future generations when they learn about these plants, you want to make certain that these

plants are available to them too, and to people in general. And of course to the animals that eat off them--this is their food, the deer, and rabbits eat certain food, birds eat off of certain things, squirrels...that's why the balance, you need to maintain that balance."

Rock Interview

"So you need to be aware of that...you need to go out into the mountains and speak to the creator--don't just look at a rock and take it for a rock, that it doesn't mean anything, that it has no meaning. Some of those rocks are very important. Like the rocks we saw today out in the field--I saw those different rocks and I commented about it...the abundance of lava rock which is used in the sweat lodge ceremonies, because in that lava rock, when you look at it, when you're in communion with the creator he'll show you things through the rock. You'll sit there in the sweat lodge and you can see those things, and you have direction...and in your dreams you are being directed, you are being guided, you are being told things that are going to happen...and your heart has to be in it, and your heart has to be there for your people, for your animal relatives, for all these natural things around you, you have to be in that sweat lodge for your family, and when you enter that sweat lodge you say to all the things around you...bird, coyote, the plants, the water, the fire...all things that are sacred, all things that relate to you in this life that have a special meaning for the very existence that you have and your relationship to those. You go into the ceremony like that, and so you look upon the rock--not just a lava rock, it's not just a rock that you see on the side of the hill, you know you relate to that rock in a very special way, and that's what I was experiencing. And as we were going further and we didn't stop to check that white rock out...there is a white rock and that's used for medicinal--it has medicinal properties in it...for acne, for zits as the teenagers say...and you use that, you can make a cream out of it and use it."

Archaeology Site Interview

"...from our perspective it's very important to us...I don't know if we're still looking for proof that our people were here, or what we're looking for...but it's so important for us, we just don't want to see it destroyed. Hopefully someday this may be a site that we can all come and visit--the whole area..there's such a--I don't know what kind of a feeling you'd call it, but it seems like there are ties to some of the places we've visited...a joy, really. It just makes you happy that you can come out here and view these things. And we can go back and share it with the ones who weren't able to come out here."

Archaeology Site Interview

"What I saw today was very important..because there was rich land here at one time--there was a very wide creek next to an encampment with a log structure, lots of pine cones and pine trees that bore fruit at one time. This place has the most pine trees I've seen here--the trees out here are very thick--it's not like the places we've seen. I think that this was a very rich and important place at one time for the Indian people to gather. There are lots of signs of life...like the structure here...it's set up like a tipi..and it's still that way, and it should be preserved that way,

not destroyed. I would like to see it preserved so that I can bring my elders here to this place..because of the water, the pinenuts, the way people lived and how they lived. They could tell me what was done here. I think the elders would like to see something like this. I think this place was the best place I've seen so far because it's so green. I wish this place could be preserved. It's really beautiful here. I hope they don't destroy it. I hope the DOE doesn't come in and destroy it."

Burial Interview

"I would not recommend moving a burial if it wasn't necessary. If they're going to put a road through then they should either avoid the burial or just even go over the top of it...just leave it where it was first put. I just have this feeling about disturbing burials..it goes against my grain to...deliberately...destroy or--'cause that's what happens what it is uncovered. And too many times if there are burial items within that grave you never see them again. If you had some

CHAPTER TWO

RESEARCH DESIGN

The DOE/NV is seeking to document where areas of cultural significance to American Indian people are located on the NTS. This research has been conducted in compliance with requirements deriving from AIRFA and the National Historic Preservation Act (NHPA). This chapter provides the reader with detailed information on how and why the research was conducted as it was. It is important to understand the types of opportunities that were provided for Indian people to identify cultural resources, evaluate the significance of these resources to Indian people today, and to express recommendations about what can be done to afford maximum protection for these resources.

The chapter is organized into four sections. These contain: (1) a discussion of three relevant federal policies, (2) a discussion of various ways that Indian people can be involved in the study, (3) the method by which this consultation relationship was established between these Indian groups and the DOE/NV, and (4) the research design for analysis of the Pahute Mesa and Rainier Mesa portions of the NTS.

This NTS study design is based in part on one produced for DOE regarding American Indian cultural resource studies for the Yucca Mountain Nuclear Waste Storage Investigations, which is currently referred to by the DOE as "the Yucca Mountain Project" (YMP) (Stoffle

Relevant Federal Policies

Native American cultural resources are being studied on the NTS because of two federal policies that are perceived to be most relevant by the DOE/NV. These are the American Indian Religious Freedom Act (AIRFA) of 1978 (PL 95-341) and the National Historic Preservation Act (NHPA) of 1966, especially the Advisory Council On Historic Preservation (ACHP) 1985 "Guidelines for Consideration of Traditional Cultural Values in Historic Preservation Review." American Indian people have a unique status in the United States because they are legally perceived to belong to conquered and dependent nations located within the United States (Worcester v. Georgia 6 Pet. 515 {1832}).

American Indian Religious Freedom Act

AIRFA specifically reaffirms the First Amendment of the United States Constitution rights of American Indian people to have access to lands and natural resources essential in the conduct of their traditional religion. They have these rights even though the lands and natural resources are located beyond the boundaries of a tribal reservation.

In Section 2 of AIRFA the President of the United States is asked by Congress to direct various federal departments and agencies to consult with native traditional religious leaders to determine appropriate changes in policies and procedures necessary to protect and preserve American Indian religious practices. Although a number of agency responses (Federal Agencies Task Force, 1979) to AIRFA are potentially relevant, that of the ACHP seems to best reflect the intention of AIRFA.

National Historic Preservation Act and Advisory Council on Historic Preservation

NHPA was passed in 1966 and has since been modified by numerous amendments. Under Section 106 the Act has established a review process, commonly called "the Section 106 process," to ensure that historic properties are effectively considered in planning by Federal agencies. In order to clarify the role of traditional cultural values in project planning, the ACHP developed guidelines which were issued in draft form in 1985.

Since the ACHP issued a draft of its "Guidelines for Consideration of Traditional Cultural Values in Historic Preservation Review," these guidelines have been reviewed and termed state-of-art by a number of scientists, agency personnel, and American Indian religious and political leaders (Harjo 1985). The ACHP guidelines provide a basis for discussing which cultural resources are directly related to the Section 106 assessment process.

A key issue addressed in these guidelines is the definition of the term "cultural value." According to the guidelines (ACHP 1985:3)

> *Cultural value* means the contribution made by an historic property to an ongoing society or cultural system. A *traditional cultural value* is a cultural value that has

> historic depth; a *non-traditional cultural value* is a cultural value that lacks such depth...(The guidelines focus) on those properties, normally though not necessarily non-architectural, whose primary value springs from the role they play in maintaining the cultural integrity of a particular social group, usually a relatively small segment of the total national society, usually though not necessarily localized, often though not necessarily of ethnic minority heritage.

The definition emphasizes those cultural values that contribute to ongoing cultural life, which has been termed elsewhere "persistent cultural systems" (Spicer 1971; Castile and Kushner, eds. 1981).

The purpose of Section 106 is to ensure that values ascribed to historic properties by the public, or most affected segments of the public, are taken into consideration when evaluating project plans that may affect such properties. Potential adverse project effects on such properties are minimized by identifying them during project planning and seeking negotiated mitigation solutions from among the concerned parties (ACHP 1985:4).

On October 30, 1992, the NHPA was again amended, providing considerably greater authority and assistance to Native Americans. The 1992 amendments specifically mention the need for Federal agencies to contact and consult with Indian tribes. Properties of traditional religious and cultural importance to an Indian tribe may be determined to be eligible for inclusion on the National Register, and a Federal agency must consult with any tribe that attaches religious or cultural significance to such properties. In addition, Indian tribes are to receive assistance preserving their particular historic properties. Coordination among tribes, State Historic Preservation Offices (SHPO), and Federal agencies is to be encouraged in historic preservation planning, and in the identification, evaluation, protection, and interpretation of historic properties. Tribes are also eligible to receive direct grants for the purpose of carrying out the Act. The amendments also provide for tribes to assume part or all of the functions of a SHPO with respect to tribal lands.

In response to the 1992 NHPA amendments, a new policy statement, "Consultation with Native Americans Concerning Properties of Traditional Religious and Cultural Importance," was adopted by the ACHP on June 11, 1993. That policy provides explicit principles for application of the amendments, including particularly that Native American groups who ascribe cultural

cultural resources and states that participants in the Section 106 process "should seek only the information necessary for planning" (ACHP 1993:3).

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (NAGPRA) (PL 101-601, 104 Stat. 3048) became law on November 16, 1990. NAGPRA makes provisions for the return of human remains, funerary objects and associated sacred items held in repositories to American Indian, Native Alaskan, and Native Hawaiian peoples who can demonstrate lineal descent, cultural affiliation, or cultural patrimony. In addition, the Act provides for formal consultation with, and participation of, indigenous peoples to decide the disposition of these resources. This process should occur as a result of repository inventories and in the event they are encountered by activities on Federal and tribal lands (Price 1991: 32-33).

According to a memorandum from the Executive Director of the ACHP (Bush 1991), NAGPRA will affect the Section 106 review process in at least three ways: (1) with regard to the conduct of archaeological investigations, formal consultation must occur with appropriate American Indian groups regarding the treatment and disposition of human remains and other cultural resources recovered during archaeological studies on Federal and tribal lands, and tribes must give their consent to the excavation of human remains and removal of remains and other cultural resources from tribal land beyond that normally required of the Section 106 process; (2) in discovery situations, agencies are encouraged to develop plans to deal with unexpected discoveries of archaeological materials and in the event of inadvertent discovery, all project activities must cease, appropriate Federal agency or Indian tribe notified, and activities must not resume for 30 days. Disposition will be resolved in accordance with the provisions set forth in NAGPRA; (3) with regard to curation, NAGPRA allows for the affiliated American Indian group to decide on the treatment and disposition of recovered cultural items, which goes beyond the ACHP policy that simply requires professional curation.

Potentially Involved American Indian Groups

American Indian people have traditional cultural ties to lands currently encompassed by the NTS. This point was established during the YMP through ethnographic interviews with contemporary Indian people, visits by Indian people to various sites located on the NTS, and analysis of historic documents. In order to understand the complexities of involving Indian people in an NTS cultural resource study it is necessary to understand four terms: (1) cultural systems, (2) ethnic groups, (3) tribes, and (4) nations.

Ethnic Groups and Cultural Systems

Ethnic groups are a product of, as well as being responsible for, their own cultural systems. According to the ACHP (1985:5):

> a cultural system is "a group of people linked together by shared values, beliefs, and historical associations, together with such a group's social institutions and the physical objects necessary to the operation of the institutions."

The cultural system is the means by which an ethnic group has come to understand and adapt to its physical and social environments.

For purpose of scientific study, a cultural system can be analyzed separately from the people who are responsible for it. This is because a people have demographic and physical characteristics that may or may not be tied directly to their cultural system. For purposes of scientific analysis, scientists tend to further divide cultural systems into their functionally-specific components such as family and reproduction, social stratification, politics, economics, and religion.

One advantage of studying a cultural system apart from its ethnic group is to document various sources of cultural change. Even though cultural systems tend to persist through time, change is a normal process. New ideas are adopted and old ones are replaced. Change occurs more frequently when the ethnic group's physical and social environments are altered. For example, changes occur if members of an ethnic group are forced to relocate to new areas or new ethnic groups arrive in a traditional area and begin competing for natural resources. Change also occurs when the ethnic group is demographically or socially altered, as when disease reduces the number of people in the group or when children are forced to attend schools operated by another ethnic group. Cultural systems can be seen as always responding to changes in the ethnic group itself and its social and physical environment.

Although components can be analyzed separately, scientists emphasize that cultural systems ultimately must be understood from a holistic perspective. For example, certain aspects of religion can be studied without reference to other aspects of a cultural system. However, when a society utilizes religion to explain and validate family form, political style, and economic behavior, these and other aspects of the cultural system become part of the religious system.

The YMP research documented the presence of four ethnic groups having cultural ties to the NTS. Three ethnic groups have traditional ties to the lands within and in the vicinity of the NTS that were established before Euroamericans arrived in the region in the mid-1800s. These are (1) the Southern Paiute, (2) the Western Shoshone, and (3) the Owens Valley Paiute (Stoffle, Halmo, Olmsted, Evans 1988). The fourth ethnic group is the (4) urban Indian population of Las Vegas. YMP research documented that members of the ethnically diverse urban population of Las Vegas, Nevada have established cultural ties to cultural resources present in the NTS study area. These ties were established during the historic period. The argument for why such ties qualify under the ACHP guidelines has been made elsewhere (Stoffle and Evans 1988:760-761). This argument appears to fit the criteria regarding reconstructed properties associated with cultural revitalization as these appear in *Traditional Cultural Properties: Guidelines for Evaluation* (Parker and King 1988:25).

Ethnic Groups and Tribes

Each American Indian ethnic group is responsible for its own cultural system. The term "nation" has been used with some authority to describe these ethnic groups and their societies, cultures, and traditional territories (Worcester v. Georgia 6 Pet. 515 {1832}). The expansion of Euroamerican ethnic groups in North America disrupted the structure, function, and national integration of American Indian ethnic groups. As various European nations (e.g., Spain, England, France, Holland, Russia) and Euroamerican ethnic nations (i.e., Canada, Deseret, Mexico, United States) achieved territorial and political sovereignty over the North American continent, there was a tendency to develop treaty and administrative relationships at the local rather than the national level of American Indian ethnic group government.

The United States formalized these local relationships with Indian people by creating "tribes," each with a similar governmental structure, its own enrolled population, and unique territory. In the United States this process culminated in the Indian Reorganization Act of 1934. The tribal government became the official body to represent the lands and people within its jurisdiction.

The current populations and boundaries of American Indian tribes do not correlate with the populations and boundaries of traditional ethnic groups. Most ethnic groups are represented by a number of tribes. Some tribes contain more than one ethnic group. Some members of the ethnic group are not enrolled by any tribe; more than a hundred of the unrecognized American Indian groups are currently seeking tribal status through the Bureau of Indian Affairs' Federal Acknowledgement program.

Nations

The term "nation" has a number of meanings as it is used to refer to American Indian tribes and ethnic groups. In general it is used to refer to social, political, or cultural functions conducted for all ethnic group members. In some instances, such as the Navajo Nation, the term nation closely represents the membership of both the tribe and the ethnic group. The match, however, is not exact because there are some Navajo ethnic group members who belong to the Colorado River Indian Tribe and some people, such as the San Juan Paiutes, who are included in the Navajo Nation but do not belong to the Navajo ethnic group. So Navajo Nation is a term of self-reference used by the government of the Navajo tribe; as such, the term nation is used more for symbolic than official purpose because it does not have a clear official status or function from the perspective of the federal government.

In the NTS region, the Southern Paiutes, Western Shoshones, and Owens Valley Paiutes had traditional social, political, and cultural functions that would be termed "national functions" by these Indian people and by some scientists. Euroamerican encroachment caused resource and population losses that, in turn, probably caused most national functions to be eliminated by the mid-1800s. Of the three ethnic groups, only the Western Shoshone negotiated what could be perceived as a national-level treaty, i.e., the 1863 Treaty of Ruby Valley (Clemmer and Stewart

1986:526). The Southern Paiutes negotiated a locally-specific treaty with the federal government (e.g. the 1865 Treaty of Spanish Fork, unratified) and a series of agreements with the Mormon church which resemble state government agreements (Clemmer and Stewart 1986:526). The Owens Valley Paiutes lacked both treaties and agreements. Without national-level treaties, the federal government only established official relationships with tribes that represent various segments of the ethnic group.

Despite the loss of most national functions, the three ethnic groups persisted, albeit with less complex socio-political organization. During the 1970s and 1980s both the Southern Paiute and the Western Shoshone ethnic group members began to reestablish national functions. The Western Shoshone established the Western Shoshone National Council, the Owens Valley Paiutes established the Owens Valley Board of Trustees, and the Southern Paiute established the Southern Paiute Chairman's Association. These three organizations work to represent their ethnic group's interests across a broad range of issues, including the protection of traditional cultural resources.

In general, national ethnic organizations are neither legally incorporated nor officially recognized by the federal government. As a result, national ethnic organizations tend to be credible only to the extent and as long as the tribal governments that officially represent the ethnic group lend support to the national organization.

Establishing a Consultation Relationship

American Indian cultural resource studies must recognize that it is the responsibility of ethnic groups to identify, interpret, and recommend mitigations regarding their own cultural resources. Because American Indian ethnic groups tend not to be officially organized, cultural resource consultation normally occurs between federal agencies and tribes. A key issue is to involve a sufficient number of tribes in a study so that the culture of the ethnic group is accurately and appropriately represented.

Tribes Involved in NTS Consultation

The study is built upon the findings of the YMP research, and the identified 17 tribes that served as points of consultation for the four American Indian ethnic groups having cultural ties to the study area. These tribes, the state where they are located, and the ethnic group they represent are as follows:

Southern Paiute Ethnic Group
- Kaibab Paiute Tribe, Arizona
- Paiute Indian Tribe of Utah
- Moapa Paiute Tribe, Nevada
- Las Vegas Paiute Indian Colony, Nevada
- Pahrump Paiute Tribe, Nevada
- Chemehuevi Tribe, California

Western Shoshone Ethnic Group
- Duckwater Shoshone Tribe, Nevada
- Ely Shoshone Tribe, Nevada
- Yomba Shoshone Tribe, Nevada
- Timbisha Shoshone Tribe, California

Owens Valley Ethnic Group
- Benton Paiute Indian Tribe, California
- Bishop Paiute Indian Tribe, California
- Big Pine Indian Tribe, California
- Fort Independence Indian Tribe, California
- Lone Pine Indian Tribe, California

Las Vegas Urban Ethnic Group
- Las Vegas Indian Center, Nevada

In the beginning of the study it was recommended that all of these tribes be invited to participate in the NTS AIRFA study. The study design assumed that if a tribe did not wish to participate in the consultation relationship their name would be taken off the list of consulting tribes at their request. The study design also assumed that additional tribes could be added to the consultation list if their interest and traditional ties to the study area could be documented. Neither of these situations occurred. All 17 tribes wanted to be kept informed of the progress of the study and the consultations, but some of the tribes did not send tribal representatives to the field sessions. The study has not indicated that any tribe was missed in the initial list of 17 tribes.

Cultural Resource Study Goals

Four cultural resource study goals are suggested as appropriate for the AIRFA compliance program on the NTS. These goals stem from the previous experiences of researchers involved in Native American cultural resource assessment studies.

Trust. Indian people must believe that their participation in consultation and identification of cultural resources is more likely to protect these cultural resources than would saying nothing at all. The credibility of the consultation process hinges on (1) the reputation of project personnel, (2) the reputation of the agency sponsoring the study with regard to past projects involving Indian cultural resources, and (3) written documents such as Programmatic Memorandum of Agreements that define Indian people's rights to be consulted and identify cultural resources.

Opportunity. Indian people must have the opportunity to discuss among themselves whether or not to participate, before they are asked to proceed with the identification and triage

of cultural resources. This can be accomplished by conducting the research in phases separated by periods during which tribal discussions can occur.

Knowledge. Indian people must fully understand how the project could impact cultural resources. This may be accomplished by having a tribal representative view first hand the study area and existing analogous projects. Videotape or still photography may assist this process. Providing background readings that illustrate other projects is useful. A face-to-face orientation session is especially useful. The educational materials must be neutral, presenting both positive and negative project impacts.

Validity. Western scientists and Indian people often have different criteria -- rules of evidence -- against which to assess the validity of knowledge. If the research findings are not accepted by scientists, regulatory agencies, and Indian peoples, then the study is invalid. Participation in the research process is perhaps the best means of assuring mutual validity of findings.

Research Design for Pahute Mesa and Rainier Mesa

This research was designed to provide a variety of interview opportunities for Indian people to identify and interpret cultural resources that are located in the Pahute Mesa and Rainier Mesa portion of the NTS. The methodology is in keeping with what is called "culturally sensitive consultation" (Parker and King 1988:8-9):

> Since knowledge of traditional cultural values may not be readily shared with outsiders, knowledgeable parties should be consulted in cultural contexts that are familiar and reasonable to them...It is usually important to take knowledgeable consultants into the field to inspect properties that they identify as significant. In some cases such properties may not be discernable as such to anyone but a knowledgeable member of the group that ascribes significance to them...Visiting the property may help a consultant recall information about it that he or she is unlikely to recall during interviews at a remote location, thus making for a richer and more complete record.

Previous research has documented the potential physical, emotional, and social stress that can result when a knowledgeable Indian person is consulted regarding traditional cultural resources (Stoffle 1987:16-19; Stoffle and Evans 1988; 1992), and so the research was designed to be culturally sensitive. If representatives felt it was not appropriate to discuss a particular cultural resource or reveal any sensitive information, such information was not elicited.

The following research method has been developed from more than a dozen American

is the primary basis for this NTS study design. In all instances, the studies produced reports that were acceptable to both the involved Indian people and the contractor.

A cultural resource study methodology can be designed to achieve the four cultural resource study goals and, thus be sensitive to the culture of American Indian people as well as to the rules of the regulatory agency. The following research methodology has nine study tasks which have been adapted over the past decade. The methodology is offered as an illustration of study tasks that are deemed appropriate for the AIRFA compliance program on the NTS and how their sequence might influence cultural resource outcomes.

Task 1: Tribal Council Contact

Most American Indian people belong to a federally recognized Indian tribe. Therefore, the first point of contact and first task in any impact assessment project involving Native American cultural resources should be with the tribal councils. Tribal councils serve as the official governing body for the tribal group, and are headed by chairpersons. Researchers, study team members and agency personnel should follow the protocol of first contacting the chairperson because the elected leader of the tribal group should be the first person on the council contacted about any research activity, including cultural resource projects. Three types of contact are usually employed: (1) letter, (2) telephone, and (3) face-to-face presentations. These contacts are the first steps in the consultation process.

Initial face-to-face contact should be in the form of a meeting at a location mutually agreed to by researchers and tribal leaders. The nature and objectives of the project are presented to Indian people attending the meeting. Visual aids such as raised topographic maps and satellite imagery are important because they provide tribal leaders and elders with a macrolevel visual perspective of the study area and places where potentially affected cultural resources may be located. It is at this step and place in the tribal organization that holistic conservation statements, advocating complete protection and avoidance of all areas and resources, are most likely to be presented.

In this study, the contact protocols were followed. Tribes were contacted by letter, telephone, and in face-to-face meetings. Chairpersons were the point of contact unless official permission was given to contact other official tribal representatives directly.

Task 2: OTCR Training

Once a tribal government agrees to participate in a study, a second task is to establish a point of contact between them and the project. This person is called the Official Tribal Contact Representative (OTCR). The OTCR is trusted to follow the day-to-day progress of the project.

interactions during the course of the research. These relationships are essential for reaching inter-tribal consensus on the mitigation of cultural resources.

Because the tribes had been involved in the YMP studies, little OTCR training was done for the NTS project. Training occurred during the initial tribal meetings.

Task 3: Tribal Leadership Orientation

Once initial contacts, meetings, and tribal decisions to participate in the study have occurred, it is beneficial to conduct an on-site orientation with tribal leaders as a third task. On-site orientation visits provide tribal leaders with a firsthand visual overview of the study area during a two to three-day period. Based on personal observation of the study area, tribal leaders can then recommend key cultural experts for interviewing and participation in future on-site visits. Tribal leaders participated in an orientation tour of the Pahute and Rainier Mesas study area in December of 1991.

Task 4: Key Cultural Expert Interviews

The fourth study task is to interview key cultural experts who have been suggested by the tribal government. Key cultural experts are defined as people recognized by the tribal council as being especially knowledgeable about the cultural resources of the group that may be located in the study area. Experts should be judged on their knowledge by members of their own community, not by the project staff. These persons are asked to speak for the cultural resources of the tribe and, consequently, they tend to repeat the holistic conservation statements made earlier by the tribal government. Key cultural experts, however, move beyond expressing general concerns for cultural resources by specifying what types of cultural resources are potentially impacted by the development project. These experts tend to define the variables that should be assessed by the study. Interviews with key cultural experts should occur only after the respective council has given permission to proceed with the study and after the OTCR has been updated on the project.

The first ethnographic interviews occurred immediately after a tribal government expressed an interest in participating in the study. Tribal government officials were asked to provide the name of key cultural experts currently residing on the reservation. With the assistance of the OTCR's these experts were contacted and were interviewed if they were willing to participate in the study.

These first interviews provide an ethnographic frame that influences future ethnographic studies. The key cultural experts raised basic questions that were then systematically asked of all Indian people who participated in the ethnobotany and ethnoarchaeological research.

Task 5: On-site Visits-Ethnobiology

The fifth task involves site visits to learn about how Indian people perceive the plants and animals potentially affected by the nuclear testing program. Ethnobiological research is generally understood to mean the scientific study of the ways that humans interact with plants and animals and incorporate these into the cultural and social systems of the people. Ethnobiological studies differ from plant and animal studies as traditionally conducted by botanists and zoologists, because of a central concern with the way the plants and animals are perceived by the people who use them. Often ethnobiological studies involve direct interviews in order to learn how people perceive the animals and the plants.

Ethnobiology as a field of scientific study can be understood by reading the only journal specifically focused on this topic, the *Journal of Ethnobiology*. This journal invites manuscripts on original research in any area of ethnobiology including, but not limited to, ethnotaxonomy, ethnobotany, ethnozoology, cultural ecology, plant and animal domestication, zooarchaeology, archaeological botany, palynology, dendrochronology, and ethnomedicine (Anon 1990:269). This list of possible ethnobiological topics suggests it is a broad field of study which is contributed to by a wide range of experts.

The NTS study focused on only two of the many possible aspects of ethnobiological research (1) ethnobotany and (2) ethnozoology.

Ethnobotany

Ethnobotanical research involves the identification and interpretation of plants traditionally used by Indian people and located in the Pahute Mesa and Rainier Mesa study area. Key cultural experts were asked about the types of plants and the places where such plants grow in the study area. These interviews produced a preliminary list of plants and ecological zones to be visited during the ethnobotany site visits. The advice of professional botanists was sought about other locations having high concentrations of plants. A list of sites to be visited and their location was prepared before the ethnobotany visits began (see Chapter Five).

Previous ethnobotany studies conducted by this research team suggest that certain questions should be asked regarding each plant identified by an Indian person. These questions involve (1) traditional and contemporary patterns of plant use, (2) parts of plants used for specific purposes, (3) season of procurement, (4) methods of preparation, (5) techniques of storage, (6) management techniques, and (7) cultural transmission.

A professional botanist was present during all ethnobotanical interviews. The botanist collected two sets of specimens for each plant identified. One set will be used as voucher specimens and kept in an approved herbarium. The second set of specimens was used by the ethnographers to conduct ethnobotanical interviews away from the study area with Indian people who were unable to visit the site.

Ethnobotanical data were collected in order to measure ethnic group concern for botanical resources. Key assumptions about Paiute and Shoshone culture and contemporary tribal organization that affect the methodology are as follows:

* Ethnic groups can differ in how they use and assign value to plants, so at least one plant expert from each ethnic group was taken to each site visited in the study area.

* Plant experts from the same ethnic group have relatively similar knowledge about plants, even though they represent different tribes, so it is not necessary to take all plant experts from the same ethnic groups to the same site.

* The use and significance of specific plants does not vary from one portion of the study area to another, so ethnic group knowledge about a specific plant identified at one site can be extrapolated to all sites.

These assumptions guided the ethnobotanical research related to the YMP study, and generally were upheld by that research. The third assumption, however, remains somewhat in question. Indian people noted that some plants have different strength depending upon where they grow

The ethnozoological research methods need to be expanded. In the future, perhaps ethnozoological studies should be conducted independently of plant and archaeology studies. Perhaps, ethnozoological studies can be conducted with photographs of animals known to be located in the study area. Clearly, further experimentation is required before American Indian animal concerns can be documented with the same degree of accuracy as is possible for plants and archaeology sites.

The ethnobiological on-site visits to the study area occurred in June of 1992 (see Chapters Five and Six).

Task 6: On-site Visits-Ethnoarchaeology

The sixth task involves on-site visits to permit Indian people to evaluate the meaning and importance of known archaeology sites in the study area. Ethnoarchaeological research involves the identification and interpretation of artifacts, sites where artifacts were used and are found today, and the analysis of the functional and spatial interrelationship of various types of sites and specialized use areas. Ethnoarchaeological studies combine ethnographic studies of contemporary American Indian people with archaeological data in order to identify and interpret spatial relationships, uses, and values of artifacts and sites that had been used by the ancestors of contemporary Indian people.

As in the ethnobotanical study, key cultural experts were asked to identify the types of sites and artifacts that are located in the study area. These interviews helped to produce a preliminary list of artifacts and locations that should be visited during the ethnoarchaeological research. The advice of professional archaeologists was sought regarding other locations where high concentrations of artifacts are located. A list of sites to be visited and their locations was prepared before the ethnoarchaeology site visits.

A professional archaeologist was present during all field interviews although the archaeologist did not participate in the interview itself. The archaeologist provided a list of site numbers for recorded sites so that the American Indian interpretations could be correlated with the scientific record.

Previous ethnoarchaeological research suggests a number of questions that should be asked regarding each archaeological artifact or site that is identified by the Indian experts. These questions include (1) the purpose of the artifact or site, (2) the season of year when the artifact or site was used, (3) whether the artifact or site was used by males or females or both, (4) whether the artifact or site would have been associated with ceremonial activity, (5) whether the artifact or site is mentioned in traditional stories, and (6) cultural transmission of knowledge about the artifact or site.

The ethnoarchaeological on-site visits to the study area occurred in August of 1992. Chapters Three and Four present the results of the ethnoarchaeology study.

Task 7: Mail Survey

When the study area is very large or there are many tribal members, the seventh study task is to survey a sample of tribal members by mail. The survey strives to measure variables defined by previous interviews with tribal members and issues that emerge clearly from the ethnographic and social impact assessment literatures. The instrument is developed in cooperation with tribal government representatives and mailed only after being approved by the tribal chair/council.

Mail surveys are designed to elicit both holistic conservation and cultural triage data (see Stoffle and Evans 1990 for definitions of these terms). Mailed surveys are especially important for reaching ethnic group members who live off the reservation. Surveys have been designed so that people can scale their concerns for cultural resources. Responses to scales provide a numeric score for all places, animals, plants, minerals, and sources of water potentially affected by the project. When the numeric scores agree with the judgment of tribal elders, tribal governments have been confident in passing mitigation resolutions regarding how to triage cultural resources (see Chapter Seven).

Task 8: Developing Cultural Resource Recommendations

The eighth consultation task is to compile a set of Native American recommendations for the mitigation of effects. Cultural resource recommendations were developed by leaders of the 17 involved tribes in consultation with their own cultural experts who have been involved with the project. Cultural resource recommendations are based upon the plants and archaeological materials identified and interpreted by Indian people during the on-site visits. For this reason, cultural resource recommendations only begin after all the cultural resource identification and interpretation studies have been completed.

The NTS study produced a single set of cultural resource recommendations, developed by a consolidated group of the involved tribes. This set of recommendations was produced by government leaders and cultural experts from the 17 tribes and Indian organizations who met together for two day-and-a half-long meetings in August, 1993 and October, 1993, respectively. These meetings were organized and conducted by the ethnographic research team, DOE/NV, and Desert Research Institute (DRI) representatives (see Chapter Eight).

Task 9: Tribal Review

Two types of Native American review occurred during this ninth task in the consultation process.

* The OTCRs received the Draft Preliminary Report (DPR) which describes the Native American findings and recommendations. This was conceived to be an interactive, not formal, review. It was intended to assure that the information

obtained from the Indian tribal representatives is accurately reflected in the document.

* After Native American recommended corrections were made in the draft document, it was submitted to the DOE/NV for official review and approval. After DOE and DRI review comments were assembled and incorporated, the study team prepared a revised Preliminary Draft Report. The tribal councils were then sent this report for their review. Following the first mitigation meeting, a second round of review for a third revised Draft Report was requested. Following the second mitigation meeting, a Draft Final Report was submitted to DOE/NV and the involved tribes for final technical review. This Final Report contains the final mitigation recommendations (Chapter Eight) that were developed during the second mitigation meeting.

CHAPTER THREE

ETHNOARCHAEOLOGY: THE INDIAN VOICE

The American Indian ethnoarchaeological on-site visits to Pahute and Rainier Mesas on the NTS were conducted between August 11, 1992 and August 27, 1992. This chapter summarizes the activities conducted during the ethnoarchaeological on-site visits, lists the number of American Indian experts who participated in the site visits, presents a detailed site-by-site analysis, and summarizes the qualitative results of the ethnoarchaeology fieldwork.

Ethnoarchaeology best describes the activities of the research team. Ethnoarchaeology as defined here involves eliciting the interpretations of American Indian people whose ancestors once occupied places and used the natural resources in the study area. In other words, ethnoarchaeology seeks to understand the cultural importance of NTS archaeology materials to contemporary Indian people. Ethnoarchaeology is different than standard archaeology in that the former seeks to record American Indian cultural perceptions of sites through ethnographic research methods. In this context, tribal representatives visit a range of selected sites and provide cultural interpretations on the function(s) of the sites, and the surface artifacts and features contained in the site area. American Indian people make these interpretations based on their knowledge of traditional Indian lifeways and from direct experience living on these lands before they were withdrawn from the public domain. Indian people describe the cultural meanings of sites, artifacts, and features in terms of religious importance, historic significance, and contribution to cultural persistence. Finally, tribal representatives evaluate the potential for disturbance and provide mitigation recommendations for the protection of sites and disposition of artifacts.

This chapter is organized into a number of sections. The section on methodology briefly describes the logistics of the fieldwork and the methods used in terms of the site visit process and interviewing. A chronology of fieldwork is also presented that discusses site visit dates and the number of representatives from each tribe that participated in specific blocks.

Following the methodology discussion, a section on site-by-site analysis is presented. In this section, for each of the eleven sites visited, the interpretations of each individual representative who gave an interview are summarized from the interview instrument. The interpretations are distinguished by ethnic group. Thus, for example, if six Southern Paiute representatives commented on a specific site, the interpretations regarding the site and each of the features observed at the site are summarized for all six individuals under the subsection

labeled "Southern Paiute." The same process is repeated for Owens Valley Paiute, Western Shoshone, Las Vegas Indian Center, and other Indian representatives.

The rationale for presenting such a detailed description on an individual, interview-by-interview basis in the section is to illustrate the enormous amount of knowledge and ideas, as well as range of interpretations, that individual Indian people have about a given site, feature, or artifact. Within this range, patterns of consistency or correlation in knowledge and interpretation of a given site, feature, or artifact among and between individuals of different ethnic groups exist. Likewise, variation in knowledge and interpretation of sites, features and artifacts among and between individuals of the different ethnic groups also exists because of the different experiences each individual brings to the on-site visit situation.

Indian representatives are both competent and able to provide ideas, interpretations, and hypotheses about archaeological materials. Such competence and ability derives from the process of cultural transmission, involving learning from parents and other relatives through the mechanism of oral history. Equally as important, this ability is gained through extensive experience in the culture and history of their people, involving long-term, intimate interaction with similar ancestral sites, features, and artifacts, and the attainment of cultural knowledge and logic as a result of that extensive experience and interaction (Stoffle et al. 1990).

American Indian people evaluate the significance of cultural resources in terms of three points of reference, (1) individual, (2) tribal, and (3) ethnic group. At the individual level, one can generally expect to find the greatest degree of variation in assessments of significance. Individuals often hold diverse attitudes about the significance of particular resources. Variations in individual attitudes can derive from differences in knowledge about the resource. Similarly, Indian people who lived in one area may feel more attachment to that area than another where they have only visited. Some cultural resources such as burials, however, are uniformly assigned high significance by all individuals. At the tribal and ethnic group levels, there can be variations in assessment of significance, even among tribes who belong to the same ethnic group. These differences may be attributed to people belonging and being identified with local and regional territories (Stoffle et al. 1990).

Following the site-by-site analysis, the final section of the chapter summarizes the patterns of consistency and variation in interpretations of sites, features, artifacts, and their significance. The section offers some generalizations derived from the analysis of individual site interviews.

Methodology

Tribal representatives visited ten sites over a three-day period (see Map 3.1). At each site, they were given time to observe the site in its entirety, examine the features and artifacts at each site, talk among themselves, and come to individual decisions as to the site's traditional purpose and functions. This process involved from as little as one hour to as many as five hours, depending on the spatial dimensions of a site and the density of cultural material present. After this process had occurred, ethnographers privately interviewed individual representatives about the site, its features, uses, and contemporary significance. Although interviews were structured around a formal questionnaire, time was provided for open-ended conversations about the site. Primary and alternative mitigation recommendations for protecting sites and artifacts were also elicited from the tribal representatives. The interview form was based on previous research, but it was developed in collaboration with DRI archaeologists Lonnie Pippin and Colleen Beck (see Appendix A).

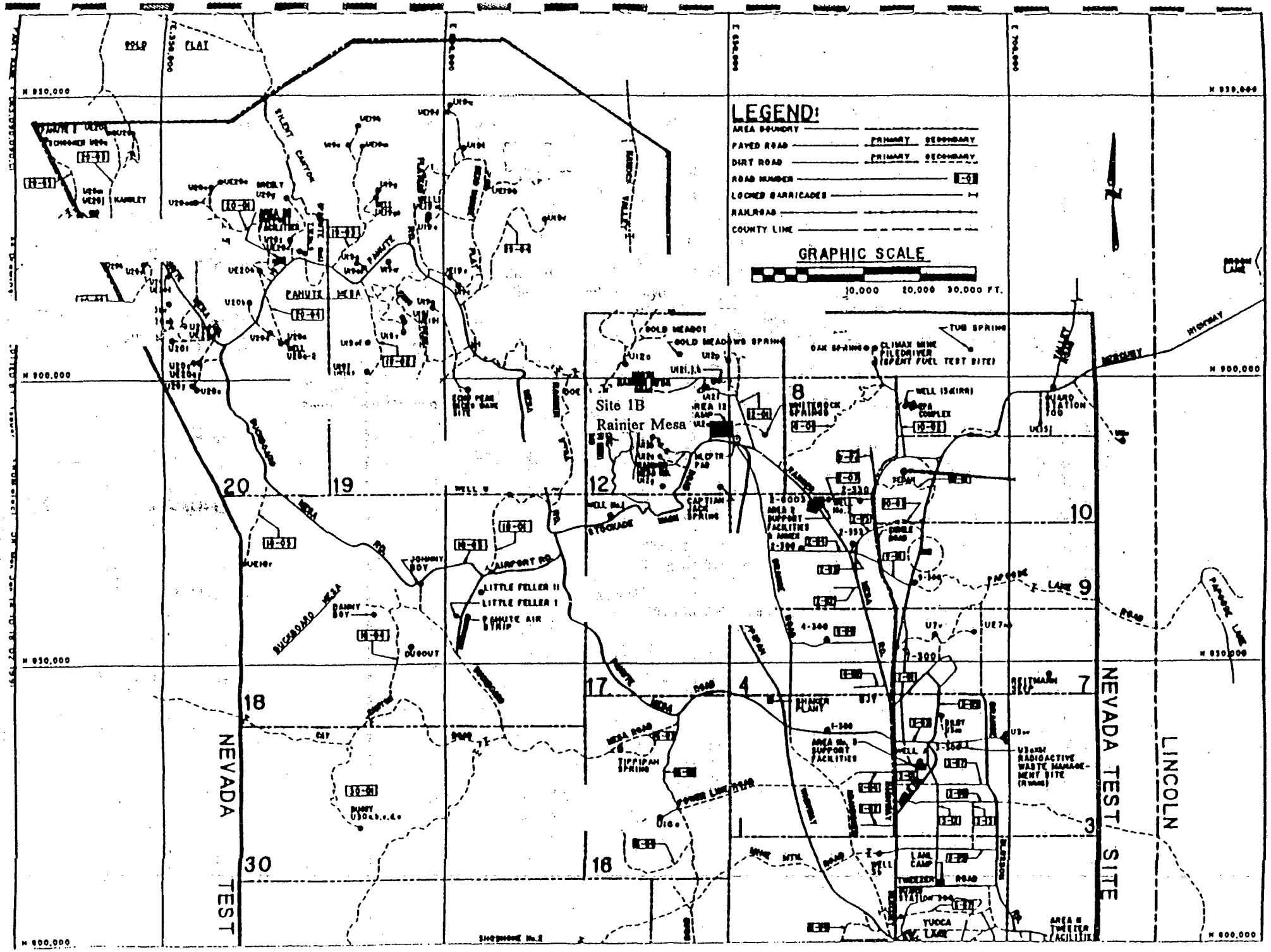
Sites Visited on Pahute and Rainier Mesas

The study design for the site visits to Pahute and Rainier Mesas took into account several factors. First, the site visits were designed to provide tribal experts with visits to sites that typified as wide a range of archaeological sites in the study area as possible. The study area was divided into three broad zones reflecting east-west, north-south and elevation factors. Sites selected for the ethnoarchaeology visits thus ranged from the eastern part of the study area on Rainier Mesa to the Pahute Mesa in the northwestern portion of the study area. Sites also exemplified a north-south range as well, ranging as far north as Lamb's Canyon in the northwestern part of the study area, to the top of Rainier Mesa in the southeastern portion of the study area. Altitude was also a factor, allowing for the range of elevation in the study area, from high elevation (@ 7300 feet) pinyon-juniper upland forest to lower elevation black sage flats (@ 5500 feet). A total of ten sites were visited in all.

For each of the three-day blocks of site visits, the first day was spent visiting two sites in the southern and eastern portions of the study area. First day sites visited were

During each of the three-day blocks, Robert Furlow of DOE/NV-EPD was present on the first day. An orientation session was held on the morning of each first day at the NTS. Representatives received the itinerary and a map, and any questions they had were answered at this time. Mr. Furlow accompanied the research team to site 1A during each block as well.

On the second day of each block, three sites in the north-central portion of the study area on Pahute Mesa were visited. Second day sites visited were


LEGEND:
AREA BOUNDRY
PAVED ROAD — PRIMARY SECONDARY
DIRT ROAD — PRIMARY SECONDARY
ROAD NUMBER
LOCKED BARRICADES
RAILROAD
COUNTY LINE
GRAPHIC SCALE
10,000 20,000 30,000 FT.
Site 1B
Rainier Mesa
NEVADA TEST SITE
LINCOLN
N 930,000
N 900,000
N 870,000
E 690,000
E 700,000
20
19
12
8
10
9
18
17
4
7
30
16
1
3

The third day of each block was spent visiting two to three sites, depending on the physical condition of the Indian people and the amount of time they desired to spend at the previous sites. Third day sites visited were

hike down gravel slopes and through thickets of vegetation. Associated rockshelters near the

Chronology of Fieldwork

Ethnographers Stoffle, Evans, and Halmo departed Tucson for Las Vegas on August 10, 1992. They spent that evening in Las Vegas and proceeded to Mercury on August 11 to prepare for the fieldwork. That afternoon, they met the representatives of the Yomba Shoshone, Lone Pine, and Pahrump Paiute tribes. Also that afternoon, Stoffle and DRI archaeologist Lonnie Pippin outlined the study design and travel itinerary for visiting the sites.

The first three-day block of on-site visits occurred between August 12 and August 14, 1992. Stoffle, Evans, and Halmo, along with DRI ethnographer Molly Dufort and DRI archaeologist Lonnie Pippin, two representatives of the Pahrump Paiute Tribe, three representatives of the Lone Pine Tribe, and two representatives of the Yomba Shoshone Tribe

visits to Pahute and Rainier Mesa. The research team was accompanied by an escort from OEA and Bill Johnson from DRI during this block of visits.

The final block of site visits began on August 24 and ended on August 26. The same series of sites were visited with two tribal representatives from the Timbisha Shoshone Tribe, two representatives of the Moapa Paiute Tribe, one representative of the Chemehuevi Indian Tribe, and two representatives of the Benton Tribe. The same series of sites were visited,

[redacted]

traveled to Las Vegas to return to Tucson on August 27. On the same day, DRI ethnographer Molly Dufort returned to Reno.

A total of thirty-two tribal experts participated in the ethnoarchaeology on-site visits. Twenty-nine individuals were interviewed. All three American Indian ethnic groups (Western Shoshone, Southern Paiute and Owens Valley Paiute) and the Las Vegas Indian Center were represented. These experts provided detailed information on archaeological sites and places of importance to Indian people. An overall total of 157 interviews were conducted. Six interviews with an Indian archaeologist representing the Chemehuevi Tribe conducted at sites 1A, 1B, 2A, 2B, 3A, and 3B are included as "Other Indian" (OI) interviews. The breakdown of interviews by site and ethnic groups is presented in Table 3.1.

Table 3.1. Summary of Ethnoarchaeology Interviews

SITE	NUMBER OF INTERVIEWS BY ETHNIC GROUP					
	Southern Paiute	Western Shoshone	Owens Valley Paiute	LVIC*	Other Indian	Total
1A	11	5	8	1	1	26
1B	11	5	8	1	1	26
1C	5	1	5	1	0	12
2A	11	5	7	1	1	25
2B	10	5	8	1	1	25
2C	5	2	4	0	0	11
3A	3	2	3	0	0	8
3B	1	1	3	0	0	5
3C	4	1	3	0	0	8
3D	3	1	3	0	0	7
3E	1	2	0	0	1	4
TOTAL	65	30	52	5	5	157

* Las Vegas Indian Center

This section describes the interpretations of the tribal participants who represented the Western Shoshone, Southern Paiute, and Owens Valley Paiute ethnic groups. Interpretations of a Las Vegas Indian Center representative and an independent American Indian archaeologist are included in the discussion.

Western Shoshone

Western Shoshone representatives visited the site on August 12, August 16, and August 24. A total of five interviews with Western Shoshone representatives were conducted at the site.

One Western Shoshone representative commented that the site was traditionally occupied by Shoshone people. The site was interpreted to have been a component of a permanent living area, because of the proximity of the spring. The site was interpreted to have been used for camping, gathering foods, hunting and trading. The representative commented that his mother had told him about this site, and wanted to visit to show him, but the area was closed to Indian access. The site was perceived to be in a special location with a special view of the surrounding area. Artifacts at the site included baskets, arrows, digging sticks, and a seed beater. The representative perceived the possibility that a burial was present.

Two Western Shoshone representatives interpreted the site as a storage site. Digging sticks, the seed beater, the basket, and ceramics all indicated food storage and collecting. Arrows suggested hunting as another activity. One of the representatives perceived the possibility that a burial was present. All the artifacts were considered to be of high significance. Concern was expressed over potential vandalism.

Two Western Shoshone representatives interpreted the site to be a ceremonial gathering area and meeting place. According to the representatives, an important person with claims to the site would call conferences or meetings and hold them at the site. Hunting and gathering activities would also have occurred at the site. All of the artifacts were considered to be of high significance. Concern was expressed over current and future vandalism.

Southern Paiute

Eleven Southern Paiute representatives participated in the site visits. Southern Paiute representatives visited the site on August 12, August 16, August 20, and August 24. A total of 11 interviews were conducted with Southern Paiute representatives at the site.

One Southern Paiute representative interpreted the site as having been a campsite for hunting and plant collecting. The artifacts at the site as well as the plants around the site were considered to be highly important. Concern was expressed for potential vandalism at the site.

Another Southern Paiute representative interpreted the site as a food gathering camp. The representative indicated that a burial was likely in the surrounding area, but not at the site. The plants and all of the artifacts, including four large ceramic pot sherds, were considered to be highly significant. Concern was expressed that increasing public knowledge would lead to increased vandalism. A third representative also interpreted the site as a seasonal camping spot for hunting and gathering. This representative, however, also perceived that a burial could be present at the site, either of a male hunter or a female. All artifacts were considered to be of high significance.

Two Southern Paiute representatives interpreted the site as a burial site. The artifactual evidence indicated to them that perhaps more than one person may be buried at the site. The baskets suggest that perhaps a female may be buried at the site. The artifacts were said to be typical grave goods left with the burial. The deceased could have been a medicine person, either male or female. The pot would have been broken upon death, leaving sherds. Burial sites were traditionally avoided. The place was considered a very spiritual and significant one. Concern was expressed over the moving of the artifacts and the potential for future vandalism.

A Southern Paiute representative perceived the site to be a burial with associated activities having occurred at the site as well. The upside down positioning of the basket at the site was indicative of a burial. In addition, the representative noted the seed beater being partially buried or covered. The arrows were seen as a gift. All artifacts were considered to be of high significance.

Another Southern Paiute representative interpreted the site to be a seasonal harvesting camp. The representative reasoned that there would not be a burial at the site because the artifacts were exposed on the surface. Artifacts and features were considered to be of high significance. Concern was expressed over current disturbance and potential future vandalism.

A Southern Paiute representative interpreted the site as a seasonal gathering place. The possibility of a burial at the site was also inferred. The site was perceived to be a spiritual place. All artifacts and features were considered to be of high importance. Concern was expressed over current disturbance and potential future vandalism.

Another Southern Paiute representative interpreted the site as a temporary stopping location. The possibility of a burial at the site was also mentioned. All of the artifacts were considered to be of high significance. Concern was expressed over potential future vandalism.

Another Southern Paiute representative interpreted the site to be a hunting and camping area. The artifacts indicated hunting, gathering, and cooking activities. Many of the artifacts were considered to be of high significance.

Another Southern Paiute representative interpreted the site as a storage area. Camping, hunting, and gathering were associated activities at the site, derived from the presence of the artifacts. All artifacts were considered to be of high significance. Concern was expressed over potential future vandalism.

Owens Valley Paiute

Eight Owens Valley Paiute representatives visited the site. Owens Valley representatives visited the site on August 12, August 16, August 20, and August 24. A total of seven interviews were conducted at the site with Owens Valley Paiute representatives.

Two Owens Valley Paiute representatives interpreted the site as a camping spot where food and basket plants could be collected, due to the nearby spring. The baskets were said to be pinenut collecting baskets. The representatives perceived that some threat of vandalism exists with regard to the artifacts.

Another Owens Valley Paiute representative interpreted the site as either a burial site or a storage area. Evidence was not sufficient enough to confidently interpret the site as a burial. On the other hand, the representative felt that grave goods may be present below the surface. People would not have left the kinds of artifacts at the site if it was only used as a storage area, according to the representative. As a result, priority was given to the burial interpretation. Concern was expressed for potential vandalism. A fourth Owens Valley Paiute representative interpreted the site as a storage area. Most artifacts were considered to be of high significance.

A fifth Owens Valley Paiute representative interpreted the site as a burial site. The

Las Vegas Indian Center

One representative of the Las Vegas Indian Center (LVIC) visited the site on August 20, 1992. He was interviewed at the site.

The LVIC representative interpreted the site as being a religious shrine with an associated burial. Gathering and storage activities would also have occurred at the site, as evidenced by the artifacts and plants at the site. All artifacts were considered to be of high significance.

Other Indian Interviews

An American Indian archaeologist representing the Chemehuevi Indian Tribe visited the site on August 24. The representative was interviewed at the site as an independent Indian person.

This representative interpreted the site as a habitation and storage area. The site as a whole was considered to be of high significance. Some concern was expressed over potential future disturbance.

A total of 26 interviews were conducted at Site 1B.

Western Shoshone

Five Western Shoshone representatives commented on Two representatives agreed in their interpretations that the site was a pinenut camp. The site was used for camping and gathering and processing of foods. The presence of the rock ring, similar to ones found on gravel in depressions in the Death Valley area, were used for storing pinenuts in small baskets until the following season. Pinenuts were processed by placing the cones in a bed of sage in the depression and covering them with more sage and lit with fire. As they steamed, the cones were stirred with long sticks. The site is connected to hunting areas. The same families would have used the hunting areas and this pinenut area. Surface features and artifacts observed at the site include the rock ring, the wooden logs interpreted as a wickiup, chipped stone, and the tin pieces which were not interpreted. Groundstone (*tusu* and *po'to*), and pinenut sticks are perceived to be present below the surface. The site would have been used from mid to late summer through fall. The site is considered to be of high significance.

A third Western Shoshone representative interpreted the site to be a pinenut camp. The site also was used for hunting deer and rabbit as well as conducting ceremonies associated with hunting and gathering activities. Relatives of the representative have transmitted stories of their use of White Rock Spring and Captain Jack Spring for similar activities. Younger people are being taught about these kinds of sites and their uses. The site is believed to be connected to storage and shelter caves in the Yucca Mountain area, with White Rock Spring serving as the

major midway point connecting the sites. Site 1B was said to be located at higher elevation for protection. Indian people cleared the pine trees away from near the shelter so that they could have a good view from the shelter. Water may have been carried to the site from White Rock or Gold Meadow Spring. Surface features and artifacts observed include the rock ring, interpreted as being used for storing pinenuts. The perforated tin was interpreted as a willow stripper used for cleaning willow branches. A large tree whose use was not known was also

Grinding stones, called *dusu* and *moto*, were perceived to be present below the surface. The location was perceived to be very significant. The site was also perceived to be a good migratory route for game. The site would have been used and occupied from the end of August to the middle or end of November. The site was judged to be of very high significance.

Southern Paiute

Eleven Southern Paiute representatives commented on Site 1B. One Southern Paiute representative interpreted the site to be a temporary living area or camp site. Southern Paiute people continue to use similar sites in other areas for hunting, gathering, camping and to conduct ceremonies, especially during pinenut season. The rock ring feature was interpreted as also possibly serving as an isolated camp for women's use during menstruation. Young people are still taught about the functions of this type of site. The site was perceived to be connected to other living sites. Surface features observed were the rock rings, a lithic scatter, the perforated tin cans, interpreted to be basket tools, and the collapsed log wickiup. The representative felt that roasting pits or fire pits, additional tools and lithics, and grinding tools could be present below the surface. The site would have been occupied from spring through fall. The site was considered to be of high significance.

Another Southern Paiute representative perceived the site to be a pinenut camp. It was used for hunting, gathering, camping, and ceremonies. Southern Paiute people continue to use similar sites in other areas for the same purposes. Young people are taught about these kinds of sites today. Southern Paiute stories are associated with sites like this. Features observed on the surface included useful plants, lithics, and the tin cans which were interpreted to be used by women for shaving willows in the making of fine basketry. The rock rings were interpreted to be a wall to prevent animal intruders, especially snakes and rodents, from entering the camp. The wood was perceived as not being used for any purpose. No subsurface artifacts or features were perceived as being present at the site. The site was used from September through November. It was considered to be of high significance.

recognized, and the representative believed that there was a possibility of burials below the surface at the site. The site would have been used during the spring and fall. It was considered to be of high significance.

A fifth Southern Paiute representative interpreted the site as either a temporary or permanent camping area. The site was used for hunting, gathering foods such as pinenuts, and camping. The wood pile was interpreted as having spiritual importance and would have served as a wickiup or a sweat lodge. According to the representative, Paiute people would have harvested pinenuts before moving to the desert. The sap of the pine tree is a spiritual item that was traded by Paiute people. The representative stated that this site may still be part of the traditional salt song. The site is said to be connected to other living areas, and may have served as a base camp from which Paiute people used to resupply other sites. Surface features and artifacts observed at the site include the wood pile and rock ring indicating camping sites, as well as the pine trees mentioned above. The representative believed that arrowpoints, other stone tools, and fiber artifacts such as woven sandals may be present below the surface. The site would have been used in summer. According to the representative, all of these areas are spiritually important. He described this particular site as a unique area. The site was considered to be of high significance.

A sixth Southern Paiute representative interpreted the site to be a food gathering and camping area. The site was used for gathering, storage and processing of foods, especially pinenuts. Southern Paiute people continue to use similar sites in other areas. The site would be connected to hunting areas. Traditional stories are associated with sites like this. Surface features and artifacts observed at the site include the logs, which are interpreted to be either a lean-to, a lodge, or a shelter for ceremonial fires. The rock ring was interpreted to be perhaps a storage structure, although such storage facilities are usually built on a sandy base rather than a rock bed base. The abundant pine trees were mentioned, as were the sage plants which have medicinal value. Chipped stone of different types was also observed, as was the perforated tin strip. The representative mentioned that her aunt used the top of a corned-beef can with holes of different sizes punched in it to size basketry materials for her willow baskets. The many holes punched in the strip at the site prevented any specific interpretation of its function by the representative. Arrowpoints, other tools, and groundstone are perceived to be present below the surface. The site would have been used in the fall, specifically October. The site was considered to be of high significance.

A seventh Southern Paiute representative interpreted the site to be a pinenut gathering area and camp. The site also was used for hunting, and may have functioned as a seasonal residence. Paiute people continue to use similar kinds of sites in areas such as Oak Spring. Younger people are taught about the functions of such sites and traditional lifeways today. Sites such as 1B are connected to residence sites. Indian people would come here briefly or seasonally to camp and hunt and collect pinenuts. Sites are connected by established trails. For example, the representative mentioned that the trail to Grapevine Spring is still visible, even though it is partly destroyed. Surface features and artifacts observed at the site included plants such as gooseberry, oak, sage, pinenuts, cliffrose, Indian tea, Indian ricegrass, and cactus in the upper

part of the site. Deer sign was also observed. The piñón logs were interpreted to be a structure. The circular ring of rocks was interpreted to be a pinenut storage cache, not a cooking pit. Other rock alignments are interpreted to be foundations. A hearth or firepit was interpreted based on charcoal observed in the soil. Obsidian flakes were also observed, as well as arrow points, flakes, and the perforated tin which was interpreted as a fiber stripper. A second, broken

[redacted]

owner. Pottery, arrows, and grinding stones are perceived to be present below the surface at the site. Baskets may also be present below the surface if someone passed away. These references to the broken fiber stripper and buried baskets being associated with a death imply that a potential burial was perceived to be present at or near the site. The site would have been occupied in August and September. It was considered to be of high significance. First-choice recommendations included roping the site off and denying access to all except Paiute people, prohibiting further construction and groundbreaking activities near the site, and leaving the artifacts in place. If artifacts had to be removed from the site, the recommendation was to repatriate them to a Paiute/Shoshone tribal museum.

An eighth Southern Paiute representative interpreted the site to be a summer camping and storage site. The site was interpreted to have been used for hunting, camping, and gathering

about traditional lifeways. All of these activities should be documented in detail and reports submitted to each of the tribes.

A ninth Southern Paiute representative interpreted the site to be a winter hunting, gathering, and camping site. Rituals and ceremonies may also have been conducted at the site. It may have functioned as an isolated site for shamans who stayed to do a sweat or have religious visions. Similar sites in other areas are still used by Paiute people for hunting, gathering foods, camping, holding ceremonies such as wakes or memorials, and visitations out of respect for the ancestors. The upper rock ring at the site was interpreted to be a winter home. According to the representative, different ethnic groups could have met at this site. The rock ring may have been learned and borrowed from another ethnic group. This site was interpreted to be connected to the Tippipah area site. An established trail would have linked the two sites. Travel time could have been as long as a week, according to the representative. The site was perceived as being an old site. Thirty to 40 people, most of whom were male, would have been at the site at any given time. Thus, the site could have functioned as a hunting station. Surface features and artifacts observed at the site included flakes and the rock formation. The black soil inside was interpreted as the ashes of a fireplace. The perforated tin artifacts were interpreted to be either art or a kind of tool, the specific function of which was not known. The wooden structure was interpreted to be a house. The remaining logs were interpreted to be firewood. Plants observed at the site included pine, Indian tea, Indian ricegrass, jimsonweed, cactus, sage, and cedar. The current vegetation was interpreted to be recovery from a burn, with some of the original vegetation no longer present. Rock and gravel, clay deposits, additional stone working tools and scrapers were perceived to be present below the surface at the site. The site would have been occupied in the spring to take advantage of the new growth following the snow melt. Rituals may have been held at the site every spring, while for hunting and gathering activities the site would have been used once in a great while. Primary function was difficult for the representative to interpret with full confidence. Features and artifacts were generally considered to range from medium to high significance. Overall, the site was considered to be of medium significance. The first-choice recommendation was to fence the site off to protect it from any potential disturbance, catalog it, and keep the location secret to all except Indian people involved in the study. No alternative recommendations were given.

Two Southern Paiute representatives agreed in their interpretation of the site as a pinenut cache. The site was used for gathering pinenuts. Young people are still taught about similar kinds of sites today, even though people may no longer use them. Traditional stories are associated with pinenut sites, which are connected to other camping sites. Pinenuts are ready when the rabbitbrush blooms. According to the representatives, Paiute people lived in the area all the time. Other Indian people came only to hunt and gather. Surface features and artifacts observed at the site included the pine trees, Indian tea, and sagebrush. The rock ring was interpreted as a cache for storing pinenuts. The wood pile was interpreted as a wickiup. Most of the features and artifacts were judged to be of high significance. The site would have been used in September and October. Overall, the site was considered to be of high significance. Both representatives recommended that the site be avoided and left in its current state. No alternative recommendations were given.

Owens Valley Paiute

Eight Owens Valley Paiute people commented on Site 1B. One Owens Valley representative interpreted the site as an isolated village. Hunting, camping, and gathering foods occurred at the site. Owens Valley Paiute people continue to use similar sites in other areas to learn more and teach young people about their cultural heritage. The site was perceived to be connected to other areas with rock rings, the cave site, and other hunting areas. Above ground features observed at the site included the rock ring which was interpreted a foundation for a windbreak or house, known as a *toni*. Also observed were the remains of a collapsed log structure. A perforated piece of metal was interpreted to be a willow measurement tool for making very fine basketry. Signs of animals such as deer were also observed. The Owens Valley representative perceived that arrowpoints and grinding stones (*tusus* and *matas*) were present below the surface. The site and its features were utilized during the fall. The site was considered to be of high significance.

A second Owens Valley Paiute representative interpreted the site as being a pinenut gathering site. The representative remarked that the site was very similar to pinenut gathering sites in Owens Valley, which people still use for gathering pinenuts today. Young people are taught about sites like this today. Indian stories are associated with similar sites. The site was connected to other living areas. Surface features and artifacts observed included rock rings, and the collapsed wooden structure. The representative believes that burials, storage pits and grinding stones may be present below the surface. The site was occupied and used in October. Pinenut sites such as this are perceived to be declining in availability and access. The site was perceived to be of high significance.

A third Owens Valley Paiute representative interpreted the site as a pinenut camp. In addition to gathering pinenuts, the site was used for camping and hunting as well as ceremonies. Similar sites in other areas are still used by Owens Valley Paiute people today. Young people are instructed about the traditional uses of such sites. The site was said to be connected to more permanent villages, in that pinenut camps were occupied and used only temporarily. Surface features and artifacts observed at the site included the collapsed wooden shelter which served as a home, tin cans, and flakes of chipped stone. The function of the rock ring was not interpreted by the representative. Hunting tools such as arrowpoints were believed to be present below the surface at the site. The site would have been used during September and October, according to the representative. It was considered to be of high significance.

A fourth Owens Valley Paiute representative also interpreted the site to be a pinenut camp. The site was also used for camping and hunting. In addition, pinenut ceremonies would have been conducted at the site. Similar sites in other areas are used today by Owens Valley people for camping and hunting. Traditional stories are said to be associated with this kind of site. According to the representative, the site was connected to other similar hunting, gathering and camping sites. Surface features and artifacts observed at the site included pine trees, the wood pile which was not interpreted, the rock ring, interpreted as a storage area for pinenuts, arrowpoints, chipped stone, tin cans, and charcoal darkening on the ground surface, interpreted

to be an old camp fire. The site would have been used in early fall, specifically September and October. The site would have been used every three to four years, depending on the variability in the rains. The site was considered to be of high significance.

Two Owens Valley Paiute representatives interpreted the site to be a temporary camping site that was used while Indian people were traveling. Similar sites like this in the mountains of the Owens Valley area were used by Indian doctors to treat people who were sick. Young people are taught about such sites today. The site was perceived to be connected to other living sites. For pinenut harvesting, this site would have been only one of several used. Surface features and artifacts observed at the site included arrowpoint flakes, pine trees, the conical structure, and the perforated tin artifact interpreted to be a stem straightener for baskets. Grinding stones and pottery are perceived to be below the surface at the site. The site would have been occupied in late fall and winter as well as middle to late spring. Depending on the pinenut crop, the site would have been used every year during the same seasons. All of the features and artifacts are judged to be of high significance. Overall, the site was considered to be of high significance. Representatives recommended that the site be made off limits and avoided if possible to preserve it. If it must be disturbed, they recommend that the artifacts be curated in a museum so that younger people can see and learn about traditional artifacts.

A seventh Owens Valley Paiute representative interpreted the site to be a pinenut camp. The representative stated that Owens Valley people used, and continue to use, similar sites for harvesting pinenuts in the mountains near Lone Pine, but that different structures are used. Conical wooden structures were not used, but instead more brush was used to construct a windbreak type of structure that was round. Today, tents are used. The rock ring was not familiar to the representative, and no interpretation of it was offered. Young people are taught about these traditional activities when pinenut harvesting trips are taken. Traditional Owens Valley legends include pinenut sites. The structure was associated with a harvesting area that would be used at the same time every year by the same family. According to the representative, each family had their own areas, but other people could use them if the areas looked like they were empty or not being used. Surface features and artifacts observed at the site included broken points, flakes, a scraper, the fallen log shelter, the perforated tin artifact which was interpreted to be a willow shredder for basketry, and the rock pile, for which no interpretation was given. Pottery, tools, and grinding stones (*tusu*) are believed to be present below the surface. All artifacts and features were judged to be of high significance. The site would have been used in summer and fall of each year. Overall, the site was considered to be of high significance. The first-choice recommendation was to not disturb the site, thus leaving it in its current condition. If necessary, some protective structure should be built around the site so that potential activities avoid it.

The eighth Owens Valley Paiute representative interpreted the site to be a pinenut camp with food caches. The rock piles are interpreted to be storage areas and food caches. Despite their declining availability, Owens Valley people continue to use similar sites in other areas for pinenut harvesting. Pinenut harvesting trips would last about three weeks. Cultural transmission to younger generations continues among Owens Valley people. Traditional legends and stories refer to pinenut sites. One mentioned by the representative included Coyote and pinenut trees. The site was perceived to be connected to the Tippipah cave site. They are close enough that movement back and forth between the two was seen to be feasible. Surface features and artifacts observed at the site included the pinenut trees, the log structure that was interpreted to be a house (*novi* or *nobi*), the perforated tin artifacts that are interpreted to be decorative because there are too many holes to be a fiber shredder, chips, flakes, and the rock rings that are interpreted to be pinenut caches. Arrowpoints and grinding stones (*matas* and *tusus*) were also observed. All artifacts and features were judged to be of high significance. The site would have been used during the fall gathering season, late August through October. The caches would, of course, be used all year long as needed. Overall, the site was considered to be of high significance. The first-choice recommendation was to protect the site in situ, with the alternative recommendation that damage be avoided to the greatest extent possible.

Las Vegas Indian Center

One representative of the Las Vegas Indian Center commented on Site 1B. The representative interpreted the site to be a pinenut camp. It was primarily used for gathering, but also for hunting, camping, and ceremonies. The site was perceived to be connected to lower elevation sites such as those in 40 Mile Canyon, where Indian people would spend the winters. Surface features observed were the rock rings, which were interpreted as house structures, the wood pile which was formerly a lodge, an arrow point, lithic scatter, and pottery fragments. The use of the perforated tin can was not known. According to the representative, the presence of subsurface burials, hand tools, and wooden artifacts such as pinenut poles were likely at the site. The site would have been used from July through October. It was considered to be of high significance.

Other Indian Interviews

The American Indian archaeologist representing the Chemehuevi Indian Tribe interpreted the site to be a temporary camp site, with the rock ring interpreted as a wickiup that served as a ceremonial area. The site was used for camping and gathering foods. The lithics at the site were interpreted to be brought in from another area, in that they did not appear to be local, according to the representative. The site would have been used in spring and fall. No significance evaluation was given.

Aqueduct Mesa (Site 1C)

A total of 12 interviews were conducted at the site. It should be noted that almost all of the representatives noted the location of the site as pleasing aesthetically. Almost all also noted what they perceived as adverse effects of testing on the vegetation, pointing to dying trees.

Western Shoshone

One Western Shoshone representative commented on the site. The site was interpreted to be an area of permanent Indian residence, hunting, gathering, and ceremonial activities. No similar sites are currently used, but younger people are still instructed about traditional lifeways that occurred in these traditional areas. The site was perceived to be connected to the Kawich Valley and Whiterock Spring. Seasonal movements would take place between the two locations. Surface features and artifacts observed at the site included a large rock ring interpreted to be a house foundation, a pendant that would have been part of a necklace, arrowpoints, chips, plants, and grinding slabs. More of the same features and artifacts were believed to be present below the surface. The site appeared to the representative as a food area rich in pinenuts, various seed plants, medicinal plants, and Indian tea. A potential burial was also perceived to be present in the site area. All features and artifacts were judged to be of high significance. The site would have been occupied and used from April through November, or three seasons of residence and resource use. Overall, the site was considered to be of high significance. The first-choice recommendation was to leave the site as it is. The alternative recommendation was to move the artifacts to a location where they can be protected. Corollary to this recommendation is that the artifacts be given to the Indian people.

Southern Paiute

Five Southern Paiute representatives commented on the site. One Southern Paiute representative interpreted the site to be one of permanent Indian residence, hunting, gathering, and ceremonial activities. Similar kinds of sites were used by Southern Paiute people as seasonal gathering camps where people lived in houses and used the area during early spring, summer and fall. In fact, the representative stated that she and her relatives traditionally visited this site area. The representative learned about the site from her grandmother, grandfather, and mother, as well as members of her father's family, who lived in the Moapa area. Information about this site is still transmitted to other Paiute people by elders. This representative told of a spiritual feeling that she had at the site, which made her go to certain parts of it where she found artifacts such as an arrowhead, and then thanked the spirits for finding it. The site was perceived to be connected to other sites in the area, in that seasonal movements occurred back and forth between sites. Surface features and artifacts observed at the site included a large rock ring that was interpreted to be the foundation of a home, a pendant interpreted to be part of a necklace, the arrowheads, chips, and a grinding slab. More of the same artifacts and features are believed to be present below the surface. Plants observed included yucca (*u'us*), pine trees, Indian tea, and rabbitbrush (*s'kump*). Yucca was perceived to be very important because it has multiple uses for Paiute people. Water was either nearby or was formerly present at the site. In addition, a burial

was perceived to be present at the site near a cave and under a rock covering. Spirits were also believed to be present. All features and artifacts were judged to be of high significance. The site would have been occupied and used during three seasons of every year: spring, summer, and fall (April through November). People lived and collected resources during these seasons. More specifically, during each of these seasons, people would live and use the resources in this area for two months and then move some distance away to harvest resources in another area nearby. The site was characterized as a good place to live, hunt and gather, with sufficient resources necessary for establishing a home base. Medicinal plants were specifically mentioned as abundant. Overall, the site was considered to be of high significance. The first-choice recommendation was to leave the site as it is. The alternative recommendation was to move the artifacts to a location where they can be protected. Corollary to this recommendation is that the artifacts be given to the Indian people.

A second Southern Paiute representative interpreted the site to be a permanent living area. Indian people lived, hunted, and gathered at the site. Southern Paiute people continue to use similar sites in other areas for hunting and gathering and transmitting traditional knowledge to young people. Traditional stories are associated with living areas. The site was connected to the boulder rockshelter site as well as other hunting sites and watering locations. Together, these sites constitute part of a cluster of living sites. Surface features and artifacts observed at the site include rockshelters, the rock rings, arrowpoints, pottery fragments, scrapers, groundstone, white marbles, and the pendant. More groundstone, points, flakes, and pottery were believed to be present below the surface. All features and artifacts were judged to be of high significance. The site would have been used all year long. The site was thought to be a very important hunting and gathering site to the people because of the abundance of arrow points. Overall, the site was considered to be of high significance. The first-choice recommendation was to close the area off from further activity because of its fragility due to previous disturbance from testing. An alternative recommendation was to collect, record, map and photograph the artifacts on the site and curate them in an Indian facility.

A third Southern Paiute representative interpreted the site to be a late summer or early fall pinenut harvesting site. The site would also have been used for camping, deer hunting, and conducting ceremonies. Southern Paiute people continue to use similar sites in other areas for the same purposes, as well as for transmitting traditional cultural information to young people. Traditional stories are associated with these kinds of sites. The site was connected to other temporary, seasonal hunting and pinenut collecting camps. Surface features and artifacts observed at the site include the pendant, made of shell material that is familiar to Paiute people, and rock rings interpreted as not associated with Paiute culture. These particular rock rings are not foundations of healing huts or ceremonial structures. The rock rings at this site vary in size, and were probably used by one group of Indian people. Rockshelters were also observed, along with arrow points, chips, scraper, grinding stones, and the white marbles which are interpreted to be a childrens' toy. Firepits, pottery, arrowpoints, and pinenut roasting pits were believed to be present below the surface. All features and artifacts were judged to be of high significance. The site would have been used at various times from April through October every year. The site was characterized as a good location rich in food sources and other materials. As many as three

different ceremonies would have been held at the site: an arrival ceremony, a seasonal ceremony, and a harvest ceremony. Overall, the site was considered to be of very high significance. The first-choice recommendation was to leave the site as is and stop all future activities in the area so that the land can rejuvenate itself. At some future point people may wish to live or recreate in the area. No alternative recommendation was given.

A fourth Southern Paiute representative interpreted the site to be a large old encampment. The site was used for probable permanent residence, camping, hunting, gathering foods, and conducting ceremonies. Southern Paiute people continue to use similar sites in other areas for transmitting cultural history information. Younger people are taught about what their ancestors did in these areas. Traditional stories are associated with such sites as well. The site was connected to other hunting sites and other pinenut harvesting areas, and the people who lived at this site probably traveled to the other areas to harvest resources. Surface features and artifacts observed at the site include flakes, arrowpoints, the rock rings, a hearth area, and a well-used, large grinding stone. Four kinds of pottery consisting of brownware, redware, gray-black, and Paiute punctate or incised were observed. Two pendants were also observed. One was made of white stone with a reddish tinge in it, and the other was made of pottery with a painted design. More points, pottery, and burials were believed to be present below the surface. The respondent felt the presence of burials near the rock rings. All features and artifacts were judged to be of high significance. The site would have been occupied all year long. The site was characterized as a very special place. The representative stated that she felt chills go through her and also felt a sense of fear because of the possibility that she was walking over a very special area. Overall, the site was considered to be of very high significance. The first-choice recommendation was to halt all testing in the area because of the special nature of the site. The alternative recommendation was to collect the artifacts and put them on display.

The fifth Southern Paiute representative interpreted the site to be a major permanent encampment. Indian people lived permanently, hunted, gathered foods, traded, and conducted ceremonies at this site. In addition, water in the vicinity made permanent residence possible. Southern Paiute people continue to use similar sites in other areas for hunting, camping, gathering foods and trading. Also, prayers and songs using sage are offered when visiting the site out of respect. Young people and emerging tribal leaders are taught about such sites and the traditional lifeways that were practiced at them. Traditional stories are associated with such sites. For example, the representative mentioned that salt songs tell about areas such as this and identify these kinds of places. The site was connected to all other gathering sites and water holes. Indian people would move back and forth and meet with different people in the course of their travels. Trade was common, and signs of trade are evident at the site. The representative estimated the population inhabiting this site to be as high as 500 people, which may have constituted one whole clan. Surface features and artifacts observed at the site include the grinding stones, interpreted to be very important tools. The arrowpoints were interpreted to have been made at the site and taken out for trade. Game was perceived as abundant. The current view was described as breathtaking, and the representative stated that it is easy to imagine what it must have been in the past. The rock rings were interpreted to be sleeping circles. Circular firepits were also observed. The five kinds of pottery were interpreted to be a significant find,

and it may have come from the lowlands because there is no clay at the site or in the highlands. Three large catch basins were noted down in the draw at the site. The rockshelters had a sacred purpose in various seasons. On the way back from the site, the representative found eagle down and perceived it as a gift to him. The possibility of a trail was also mentioned. The two pendants are interpreted as individual property. More of the same artifacts and features were believed to be present below the surface. In addition, the presence of burials was felt at the site. This representative also had a spiritual feeling that was stimulated by a whirlwind. He characterized the site as a sacred area. All of the features and artifacts were judged to be of high significance. The site would have been occupied all year long. The ecosystem would have supported an entire people. It is not clear what level of social organization, whether a band, clan, tribe, ethnic group, is implied in this statement. Overall, the site was considered to be of very high significance. The first-choice recommendation was to leave the site as it is and avoid major excavation. Because it is a sacred site, only surface study was recommended, but no ground disturbing activity. The site is already fragile because of tunnels built for testing. The alternative recommendation was that if the site must be destroyed, then the features and artifacts should be destroyed with it.

Owens Valley Paiute

Five Owens Valley Paiute representatives commented on the site. One Owens Valley representative interpreted the site to be an area of permanent Indian residence, hunting, gathering, and ceremonial activities. The site was perceived to be connected to the Kawich Valley and Whiterock Spring. Seasonal movements would take place between the two locations. Surface features and artifacts observed at the site included a large rock ring interpreted to be a pinenut storage cache, a pendant that was interpreted to be part of a necklace, arrowpoints, chips, plants, and grinding slabs. More of the same features and artifacts are believed to be present below the surface. The site appeared to the representative as a vista point overlooking the valley which hawks flew over. A potential burial was also perceived to be present in the site area. All features and artifacts were judged to be of high significance. The site would have been occupied and used from April through November, or three seasons of residence and resource use. Overall, the site was considered to be of high significance. The first-choice recommendation was to remove all artifacts, except burials which should be left alone, to a museum so that Indian people can have access to them. To leave them in place would mean risking vandalism. A museum or cultural center should be built close by and staffed by Indian people. No alternative recommendation was given.

A second Owens Valley Paiute representative interpreted the site to be a homesite where Indian people lived, gathered foods, hunted, and traded. Owens Valley people continue to visit such traditional sites to transmit cultural history information. This cultural history information is transmitted from the grandparents to their grandchildren, who upon becoming adults in turn pass it on to their children, grandchildren, and other relatives. The representative's family traditionally used and currently uses similar kinds of sites in other areas for hunting, camping, and gathering foods. Traditional stories are associated with such sites. The site was connected to other homesites and camping areas in the area, as well as pinenut gathering sites. The same

people probably moved between these areas to harvest resources. Social visits were also conducted between sites. Surface features and artifacts observed at the site included the rock rings, a shell pendant, grinding stones, a pinto-like point, stone chips and flakes, and pottery sherds. More points and grinding stones were believed to be present below the surface. Water from a spring was believed to be present in the uplands. All features and artifacts were judged to be of high significance. The site would have been occupied all year long. The site was perceived to be very old because of the type of arrowpoint found there. Overall, the site was considered to be of high significance.

A third Owens Valley Paiute representative interpreted the site to be a pinenut camp. The site also was used for hunting, camping, and making tools. Owens Valley Paiute people continue to use similar sites in other areas for hunting, camping, and gathering foods such as pinenuts. The site was connected to permanent sources of water, and Indian people would move back and forth between the two. Surface features and artifacts observed at the site include plants (none were specified), animal sign (none specified), natural material such as toolstone, a hearth or firepit, arrowpoints, scrapers, flakes, grinding stones, a potential trail, four types of pottery sherds, and the pendant. All features and artifacts were judged to be of high significance. The site would have been used from late August through the end of November; August through September for pinenut harvesting, and from October through November for deer hunting. Overall, the site was considered to be of high significance. The first-choice recommendation was to leave the site in its current condition, and avoid any ground disturbing activities in the area. The alternative recommendation was to move the artifacts to a museum.

A fourth Owens Valley Paiute representative interpreted the site to be an old camping area used for permanent residence, hunting, gathering, and ceremonial activities. The site was connected to other hunting and camping areas to which people traveled to visit with others. Surface features and artifacts observed at the site include the rock rings, arrowpoints, rockshelters, and abundant flakes. Two pendants were observed, one made of pink and white stone, and the other ceramic. Four kinds of pottery were also seen, as well as a wind break, marbles, a round grinding stone, a flat grinding stone, and a water hole. Arrowpoints and possibly burials were believed to be present below the surface. All features and artifacts except the lithic scatter were judged to be of high significance. The site would have been occupied and used all year long. The site was characterized as a permanent living area because of the location, the availability of pinenuts, the abundant hunting evidence, the homes evidenced by the rock

The fifth Owens Valley Paiute representative interpreted the site to be a living or residence site that was used for camping, hunting, trade, and social visiting. Owens Valley Paiute people continue to use similar sites in other areas for recreation and gathering pinenuts. Children are taught about such sites and the traditional activities that occurred there. Traditional stories are associated with such sites. The site was connected to other living sites. People traveled to different sites to harvest plant and animals. Surface features and artifacts observed at the site include rockshelters, points, pottery, rock rings, and small white marbles. Everyday items and burials were believed to be present below the surface. All features and artifacts were judged to be of high significance. The site would have been occupied from March through November. Overall, the site was considered to be of high significance. The first-choice recommendation was to stop testing and avoid the site. An alternative recommendation was that, if the artifacts are to be removed, they should be given to the Indian people.

Las Vegas Indian Center

One Las Vegas Indian Center representative commented on the site. He interpreted the site to be a large, high elevation, multi-family camp. The site would have been a high use area, with as many as 150-200 people camping, hunting, gathering food and medicinal plants, and making tools from June through October. Younger people are still taught about the traditional activities that took place at these kinds of sites. Traditional Indian stories are associated with such sites. The site was connected to similar lower and mid-elevation camp sites. Indian people moved back and forth between locations using Aqueduct Canyon as the travel route. Surface features and artifacts observed at the site include the white marbles, interpreted as game pieces, numerous arrowpoints, flakes and abundant pottery sherds, primarily brownware. The rock rings are interpreted to be homes. Grinding stones were also observed. A partially destroyed rockshelter was also noted. Abundant subsurface features are believed to be present, including pottery, arrowpoints, and burial grounds. All artifacts and features are judged to be of high significance. Because of the high elevation, the site would have been used in summer and fall of every year. Overall, the site was considered to be of high significance. The site was perceived as having been adversely affected by testing, evidenced by dying trees and the partially destroyed rockshelter. The first-choice recommendation was to leave the site as it is with no further disturbance activities so that it naturally regenerates to its original condition. The alternative recommendation was to survey the area with photo documentation before and after any activity. In addition, the area should be reforested and restored to its original condition.

A total of 25 interviews were conducted at the site.

Western Shoshone

Five Western Shoshone representatives commented on the site. Two Western Shoshone representatives interpreted the site to be a single family winter house (*domo* or *doni*). The site was occupied permanently, mostly in the winter. The house was said to be well constructed.

People would hunt and gather foods such as pinenuts, ants and cicadas from other locations. Fires would burn in the middle of the house during the night, and children would sleep around the fire. One of the representatives mentioned that her family had a winter house from which they hunted and gathered and that her grandmother lived in one in the mountains that was similar to the structure at The site was connected to similar types of camps in nearby areas, but with smaller homes. Neighbors would camp for five days. According to the representatives, a "moon house" would be built for women to stay in during their menses. The representatives mentioned that Shoshone people attended ceremonies at Ammonia Tank, on the way to Whiterock Spring. A friend of one of the representatives used to run cattle and hunt deer in the Whiterock Spring area, and mentioned a trade route running through Area 12. Surface features and artifacts observed at the site included the home, a firepit, flakes, various plants, signs of animal presence, and a grinding stone. The location was seen as special, in that an area where large houses are built for permanent occupation must have been rich in plants, animals, and water. One source of water would come from melting snow, as well as the Ammonia Tank water source. All of the features and artifacts are judged to be of high significance. One representative emphasized that he has been in the site area. The site would have been occupied in fall and winter, from September through February. Overall, the site was considered to be of high significance. The first-choice recommendation was that all current and future activity around the site be avoided. No alternative recommendation was given on the grounds that the site cannot be moved in order to protect it.

A third Western Shoshone representative interpreted the site to be a permanent one family camp. An Indian family would have lived at the site, hunted deer, and gathered foods, as Western Shoshone people traditionally did in this and other areas. Other people may have pitched tents and camped at the site for awhile. As a result of visiting the site, the representative will teach younger people about the site and the activities that occurred there. The site was connected with other similar camps where Indian people lived and visited back and forth. Surface features and artifacts observed at the site include the fallen lodge, interpreted as a solidly made homestead. The placement of the lodge in a shallow wash was seen as unusual. Grinding stones and flakes were also observed. Plants observed included pine, sage, and Indian tea. The representative was not certain whether subsurface features and artifacts were present. The possibility of burials was noted. The location was seen as special, because according to the representative, people would only build a large house in a spot that was special to them. All features and artifacts were judged to be of high significance. The fallen lodge was seen as particularly significant in that young people rarely if ever have seen such a structure. The site would have been occupied all year long, with other people staying for shorter periods of time, especially during pinenut season. Overall, the site was considered to be of high significance. The first-choice recommendation was to replace the yellow ropes and fence the site off and eliminate further disturbance. The alternative recommendation was to remove the artifacts and curate in a museum.

Two Western Shoshone representatives interpreted the site to be a winter dwelling or "snow dwelling" (*taha'toni*). The site was used for permanent residence, hunting and gathering. Western Shoshone people continue to use similar sites in other areas for camping, hunting, and

gathering. The representatives' mothers and aunts used to live in a similar structure. They closed the cracks in the walls with sage, cedar and other tree barks to insulate the house from the cold. Western Shoshone religious beliefs recognize a snow spirit that is to be respected, and so snow houses have traditional stories associated with them. Older people would have been moved to the winter dwellings before the younger ones. An important person would precede the group to the site to perform rituals. The site was connected to other living sites that serve as summer camps and rabbit hunting areas. The same people would have used both kinds of sites. Surface features and artifacts observed at the site include the log structure, plants, pottery sherds, and flakes. Grinding stones (*tusu*, *poto*) as well as burials were believed to be present below the surface. All artifacts and features were judged to be of high significance. The site would have been occupied all year long, except for the summer (June, July, and August). The site was

and structures in this condition are rare. Overall, the site was considered to be of high significance. The first-choice recommendation was that all future activity be avoided at the site. No alternative recommendation was given on the grounds that these types of sites are difficult to protect except *in situ*.

Southern Paiute

Eleven Southern Paiute representatives commented on site 2A. One Southern Paiute representative interpreted the site as a campsite that was used for gathering foods, hunting, and trading, especially pinenuts. Southern Paiute people continue to use similar sites in other areas.

was also interpreted as a former spring that may have dried up. The site would have been used for short term, two-week intervals at various times throughout the year. Horses may have been used to haul wood and other belongings. The site was considered to be of high significance.

A third Southern Paiute representative interpreted the site as a relatively recent pinenut camp. More specifically, the site was interpreted as a Paiute camp. The site was used for hunting, camping, and gathering pinenuts. Southern Paiute people continue to use similar sites in other areas for collecting pinenuts and teaching young people about traditional lifeways. Traditional stories are associated with these kinds of sites. Camps such as this one would be connected to similar campsites on top of the mesa. Surface features and artifacts observed at the site included the wooden structure, two grinding stones, the dry bed of the wash, and the pine trees. The site would have been used from September through December. It was considered to be of high significance.

A fourth Southern Paiute representative interpreted the site to be an early fall hunting camp. In addition to camping and hunting, foods were gathered at the site. Southern Paiute people continue to use similar sites in other areas for the same purposes, as well as for transmitting traditional cultural information about such sites and traditional activities to younger people. Traditional stories are associated with such sites. The site was connected to summer and winter camps. Indian people traveled to each of their different camps during the changing seasons. Surface features and artifacts observed at the site included the cedar poles, which are interpreted to be a shelter or wickiup. Flakes and a grinding stone were also observed, as well as plants such as pine. Arrowpoints, pottery, and more grinding stones were believed to be present below the surface. All features and artifacts were judged to be of high significance. The site would have been occupied in fall, from September through most of November. The site was characterized as a good hunting and gathering area as evidenced by its location, the presence of the log dwelling and the abundance of pine. The representative stated that she felt more secure because another representative made it a point to pray and leave offerings before walking to a site. Overall, the site was considered to be of high significance. The first-choice recommendation was to leave the site as it is and avoid further disturbance. The alternative recommendation was to make a replica of the dwelling and put it someplace where people can learn about it.

A fifth Southern Paiute representative interpreted the site to be a family summer home. Indian people would have lived semi-permanently at the site, which also was used for hunting, gathering, and trade. The flakes found at the site indicated trade to the representative. It may have been a non-Indian trading spot, given the observation that Indian people wouldn't build the dwelling in the wash. Perhaps, according to the representative, an Indian woman may have married a mountain man. A flash flood may have torn out the foundation of the dwelling. As

a result of visiting the site, the representative stated that she would instruct her children and others about the site and the traditional activities that occurred there. Traditional stories are associated with such sites. The site was connected to site 1B and other sites in the area, as well as villages to the north and south such as Pahrump and Moapa. This site was used as a stopover or trading location, and may also have been used for social gatherings and ceremonies. Sites

site include the log dwelling with a single large ceiling beam, pine, cedar, wooden beams that appeared to be cut with an axe, a toolstone core, barrel and prickly pear cactus, sage, abundant flakes indicating trade, and dark soil interpreted to be hearths with charred logs inside and outside the dwelling. The presence of a fire immediately outside of the dwelling was interpreted as not common for a sweathouse, affirming the domestic dwelling interpretation. Also, the absence of large rocks further negated a sweathouse interpretation. More tools, pottery sherds, firepits, seeds, metal artifacts, and deteriorated buckskin and furs are believed to be present below the surface. The dense lithic scatter stood out as the most important feature, according to the representative. All of the features and artifacts, except location and animal presence, were judged to be of high significance. The site would have been occupied from summer to just before the beginning of winter. The representative estimated the date of site use and occupance to be in the 1840s. The site was characterized as a gathering spot with no ritual functions, established to conduct activities quickly, in contrast to site 1B, which was interpreted as a planned site. Overall, the site was considered to be of high significance. The first-choice recommendation was that DOE have a monitor check the site at various times. A local Paiute monitor could be chosen as well. The alternative recommendation was, "if the DOE wants the mountain so bad," to photograph (ground and air) and document the site, place all data in a museum or DRI so that Indian people can see it.

A sixth Southern Paiute representative interpreted the site to be a homestead or temporary hunting camp. This representative saw no artifacts to indicate the presence of women at the site. If, however, women were present, they would have gathered food plants at the site. Paiute people continue to use similar sites in other areas for the same purposes. As a result of visiting the site, the representative stated that he would instruct relatives and other tribal members about the site and the traditional activities that occurred there. Traditional songs mention such sites. The site was connected to site 1B. People would come from the north, following the migratory route of deer and other animals. The site would have been occupied by three to five people at most. They would have stayed at the site for up to a month. Surface features and artifacts observed at the site include wood used as lumber or beams, the log wickiup structure, abundant flakes, and plants such as cedar trees, cactus, and sage. The dry stream bed once flowed periodically, and the representative interpreted that the runoff water would have been used. The presence of toolstone and abundant flakes led to the interpretation that a flint knapping station constitutes part of the site. Horse tracks, birds, and the carcass of a cicada (*hanuva*) were also observed. Charcoal and flat sitting stones were believed to be present below the surface. All features and artifacts except for location, water, and animals were judged to be of high significance. The site would have been used during the spring and fall. The site was characterized as a good hunting location, hidden from view, and along a likely animal migratory route downstream. Chemehuevi people may have interacted with the people who were here while tracking game, but they would not have intruded into the site; they would have waited to be invited by those at the site and they would have slept outside. The site was considered to be of low significance. The first-choice recommendation was to catalog and map the site from the ground and air, and fence it off. In addition, the distance from the road should be measured, and the dimensions of the structure and the features, especially the lithic scatters, should be recorded.

Two Southern Paiute representatives interpreted the site to be a permanent summer house. The site was also used for gathering pinenuts. Southern Paiute people continue to use similar sites in other areas for gathering pinenuts. Paiute people traditionally built houses (*nuwukan*) with brace poles. A fireplace was located in the house. In addition, a kitchen (*nuwukant*) area was constructed out of sagebrush in a crescent moon shape. Cedar or pine branches were used to cover the roof poles. The kitchen area lasted for a couple of weeks. Paiute people still teach other tribal and ethnic group members about such sites and the traditional activities that occurred there. The site was connected with other living areas and pinenut camps. The site was perceived as a spiritual place. Surface features and artifacts observed at the site include pine trees, rabbitbrush, cedar, grass, and the wickiup structure. Cicadas were also noted as being prevalent and used for food. Grinding stones were believed to be present below the surface. All of the features and artifacts were judged to be of high significance. The site would have been used in the fall (October, November) during pinenut season or as needed at various times throughout the year. Representatives stated that the spiritual feelings were strong at the site, and they likened them to good feelings one gets when praying. Overall, the site was considered to be of high significance. The first-choice recommendation was to leave the site as it is and avoid disturbance. No alternative recommendation was given.

A ninth Southern Paiute representative interpreted the site to be a seasonal camping and hunting site. Southern Paiute people continue to use similar sites in other areas for the same purposes. The representative mentioned that her father used an old location in the mountains near Pahrump. Paiute people build similar structures today, although they are round and made with sage poles instead of logs. Children, relatives, and younger people are instructed about such sites and the traditional activities that occurred there. The site was connected to distant permanent residences by trails that would have run from the settlements to this site. Surface features and artifacts observed at the site include an abundance of flakes, a grinding stone, the round conical lodge that appears similar to a tipi and is probably made of cedar and piñón, a surplus wood pile, and sage, piñón, and cedar plants. The representative noted the floor depression of the lodge and mentioned that no rocks were used. All features and artifacts were judged to be of high significance. The site would have been used in winter and fall, most likely for deer hunting and pinenut gathering. The representative estimated that the lodge may have been built as late as the 1920s. Overall, the site was considered to be of high significance. The first-choice recommendation was to leave the site as it is and avoid further disturbance. In addition, the site should be roped off. No alternative recommendation was given.

A tenth Southern Paiute representative interpreted the site to be a permanent camp used for permanent residence, gathering foods, hunting, and conducting ceremonial activities. The abundant flakes indicated camping, and the site was characterized as an ideal place to live. Southern Paiute people continue to use similar sites in other areas for camping and teaching their children about traditional lifeways. The site was connected to other sites such as the Tippipah area site and other camps near water. Surface features and artifacts observed at the site include the log house, chips, pottery, and arrowpoints. The absence of grinding stones was noted. All features and artifacts were judged to be of high significance. The site would have been occupied all year long. Overall, the site was considered to be of high significance. The first-choice

recommendation was to make the site accessible to Indian people who wish to bring young children to the site so that they can see it and learn about their past. If the site were to be destroyed, this would not be possible. No alternative recommendation was given, except that the representative would support the recommendations of elders.

The eleventh Southern Paiute representative interpreted the site to be a single dwelling used for camping, hunting, and gathering. The wickiup contains a fireplace, but there was no evidence of a large camp. The site is in part of the area covered by the salt song, according to the representative. Children are still taught about such sites and the traditional activities that

[redacted]

connected to other living sites and camping locations on the mesa. Surface features and artifacts observed at the site include the lithic scatter, the log structure, plants, a hearth or firepit, grinding stones, a possible trail, and pottery. The pottery was interpreted to be imported tradeware, not made at the site. A trail likely came through, and the site may have served as a stopping point on the way to higher elevation sites. More such evidence was believed to be present below the surface. All features and artifacts, except for location, are judged to be of high significance. The site would have been occupied in spring and summer, from April to September, before the snow. The representative stated that there is always a spiritual significance associated with these places. Overall, the site was considered to be of high significance. The

are believed to be present below the surface. All features and artifacts were judged to be of high significance except for the lithic scatter, which was differentially perceived as medium by one representative and high by the other. The site would have been occupied from April to August of every year, depending on the pinenut crop. Overall, the site was considered to be of high significance. The first-choice recommendation was to leave the site in its natural state and avoid further disturbance. No alternative recommendation was given.

A fourth Owens Valley Paiute representative interpreted the site to be a sweathouse in a permanent living area. The site was used for a variety of purposes, including permanent residence, gathering foods, hunting, rituals and ceremonies, processing pinenuts, and tool production. According to the representative, sweathouses were dug down in order to have a sunken floor. Two log post were leaned inwards and covered with willows and dirt. A fireplace was placed in the middle. People would then walk into it like a cellar. The representative's great-grandparents had a traditional sweathouse. More recently, the representative's uncle and family built one with canvas instead of earth and grass, so Owens Valley people continue to use sweathouses. Grandchildren and other tribal members are taught about sweathouses and the rituals and ceremonies that are conducted within them. Traditional stories are associated with such sites. The site was connected to hunting and pinenut camps. Areas that Indian people used for hunting, gathering pinenuts, seeds, and medicinal plants are all interconnected. Surface features and artifacts observed at the site include chips and flakes, a flat cleared place for cooking pinenuts, the logs (*musa*) and a storage area. The presence of ants and cicada (*kua*) were also noted. Remains of houses, grinding stones, and burials were perceived to be present below the surface. All features and artifacts were judged to be of high significance. The site would have been used all year long. Overall, the site was considered to be of high significance, in that there are not many places left like this, and none in the Owens Valley, according to the representative. The first-choice recommendation was that DOE should move their activities to another spot and avoid this site. No alternative recommendation was given.

A fifth Owens Valley Paiute representative interpreted the site to be either a summer seasonal dwelling place used for seasonal residence and gathering pinenuts. Traditional stories are associated with such sites. Surface features and artifacts observed at the site include the wood dwelling, the creek bed, pinenuts, cactus and other plants, obsidian chips, a firepit, and pottery. All features and artifacts, except for animals, the firepit, and the lithic scatter, which are judged to be of medium significance, received high significance ratings. The site would have been occupied from June to October of each year. Overall, the site was considered to be of very high significance because of the evidence of Indian presence as well as water and pinenut harvesting. The first-choice recommendation was to save the site from ground-disturbing activity and fence it off. The representative would like Indian people to have the right to visit the site. The alternative recommendation was to remove the logs and reconstruct it in its original form in a museum.

A sixth Owens Valley Paiute representative interpreted the site to be a short-term camping site that also was used for hunting, gathering foods, and conducting associated rituals and ceremonies. As a result of visiting the site, the representative stated that he intended to teach

his children and other relatives about the site and the traditional activities that occurred there. The site was connected to places that have water sources. Surface features and artifacts observed at the site include the log lodge, pottery, plants, grinding stones, and flakes. Arrowpoints, cans, and beads were believed to be present below the surface. All of the features and artifacts, with the exception of the structure and the lithic scatter, were judged to be of high significance. The site would have been used in September and October. Overall, the site was considered to be of high significance. The first-choice recommendation was to keep the site restricted. No alternative recommendation was given, in that the log dwelling is hard to move.

A seventh Owens Valley Paiute representative interpreted the site to be a sweatlodge. The site was also used for camping. Owens Valley people continue to use similar sites in other areas for camping, gathering pinenuts, and recreation. Children are taught about such sites and the traditional activities that occurred there so that they learn how their ancestors live and gain respect for their traditional culture. Traditional stories are associated with such sites. The site was connected to other living areas. Men would have used sweatlodges, which were built in areas that Indian people lived. Men would have gone into the creek after they got out of the sweat. Surface features and artifacts observed at the site include the remains of the sweatlodge, plants, the creek bed (a former water source), flakes, and grinding stones. The representative also noted the atmosphere of quiet beauty and serenity. Burial grounds, grinding stones, and additional evidence of Indian occupation were believed to be present below the surface. All features and artifacts were judged to be of high significance. The site would have been occupied from May through October. Spiritually, sweatlodges are sacred to men in Owens Valley. Mens' societies composed of heads of families conducted the sweats. The site was characterized as a sacred area with probable burials and the spirits of the dead present. Overall, the site was considered to be of high significance. The first-choice recommendation was to preserve the site and avoid construction in the area. No alternative recommendation was given, in that it was said the sweatlodge cannot be moved.

Las Vegas Indian Center

One Las Vegas Indian Center representative commented on site 2A. He interpreted the site as a seasonal mid-range elevation camp. The site served as a major camping location in the transitional location between the highlands and lowlands. It was used for hunting deer, and gathering pinenuts as well as rituals associated with those activities. Indian people continue to use similar sites in other areas for hunting, camping, gathering and teaching young people about traditional lifeways. Traditional stories are associated with these kinds of sites, which are said to be connected to both higher and lower elevation campsites. Surface features and artifacts observed at the site included the dry creek bed, which served as a water source during certain seasons, the remains of a wickiup, three milling stones, and flaked stone, evidence of arrow and other tool production. The representative mentioned that there was the possibility of burials in the area, in that groups usually consisted of members of all ages. The site would have been used during the spring and summer. It was considered to be of high significance.

Other Indian Interviews

The American Indian archaeologist representing the Chemehuevi Tribe commented on the site. He interpreted the site to be a permanent winter home. The site also was used for gathering pinenuts and hunting. The site was connected to other living sites. Artifact similarity was noted, and the presence of pottery means that Indian people were at the site for an extended period. The house structure was seen as especially important, in that houses were blessed. Surface features and artifacts observed at the site include the structure with a dugout floor, grinding stones, an obsidian lithic scatter, and pottery fragments. The poles appeared to be cut with an axe. More lithic materials, diagnostic artifacts, arrowpoints, scrapers, and food preparation tools were believed to be present below the surface. All features and artifacts were judged to be of high significance. The site would have been occupied during the fall and winter seasons. Overall, the site was considered to be of high significance. The first-choice recommendation was to have archaeologists thoroughly record and photograph the site, but excavation of any kind should be avoided. The site would be a good educational tool for teaching young people about traditional lifeways.

A total of 25 interviews were conducted at the site.

Western Shoshone

Five Western Shoshone representatives commented on the site. One representative interpreted the site to be a permanent residence area that also was used for hunting, gathering, and conducting ceremonies. The representative mentioned that it was possible that his grandfather lived here. As a result of visiting the site, the representative stated that he intends to teach his grandchildren about the site and the traditional activities that occurred there. Traditional stories are associated with such sites. The site was connected to pinenut camps and Whiterock Spring. Indian people would return to this site after gathering pinenuts or going to Whiterock for ceremonies and trade. Surface features and artifacts observed at the site include the rockshelters, the tinajas or natural water tanks, arrowpoints, pottery sherds, and a round grinding slab. Plants observed include ricegrass, Indian tea, pinenuts, and another type of grass. More grinding stones and perhaps grave sites may be present below the surface. The location was seen as special because of the view, the nearby water, the cool atmosphere and the shelter. All features and artifacts were judged to be of high significance. The site would have been occupied throughout the year. In the fall, men would do hunting from this site. Women and children would stay behind and wait for hunters to return. The ridge above the rockshelters may also have served as a lookout point. Overall, the site was considered to be of high significance. The first-choice recommendation was to leave the site as it is, and stop testing. The representative would like to bring children to the site to view the artifacts that are there so that they can learn about traditional lifeways. An alternative recommendation was that, even though the rock shelters cannot be moved, the pottery and points should be removed to protect them from theft.

Two Western Shoshone representatives interpreted the site to be a grass seed gathering camp that was also used for camping and gathering pinenuts. The grinding stone was interpreted as being used for grass seed. Children, grandchildren, relatives and other family members are taught about such sites and the traditional activities that occurred there. Traditional stories are associated with such sites. An old story was related concerning a similar area near Monitor Valley. The story is about

> *Zoavich*...Rock Woman...she is coming and the people holler "*joweyoh*, hide your babies...so children are told to be quiet. If they make noise, Zoavich will come and eat them or take them to her rock children...she chases them like fire...Dad got fire, put it in a basket with pitch. Zoavich ran around until her heart broke. This is why you find some [Indian word] in her cave.

The site was connected to other pinenut camps and summertime homes. People would move back and forth between sites. Surface features and artifacts observed at the site include the rockshelters, firepits, flakes, tinajas, arrowpoints, a grinding stone, pottery sherds, and rock walls. Plants such as grass and pinenuts, a deer trail, and lizards were also observed. More

Southern Paiute

Ten Southern Paiute representatives commented on site 2B. One Southern Paiute representative interpreted the site as a permanent living area, or village for a large group of people. In addition to permanent residence, the site was used for hunting, gathering, and trade, as well as rituals associated with hunting and collecting. Southern Paiute people continue to use similar sites in other areas for camping, hunting, gathering, and teaching young people about traditional lifeways. Traditional Southern Paiute stories are associated with permanent settlement sites, which are said to be connected by trails to other living areas in the general vicinity. Surface features and artifacts observed at the site include the rockshelters, grinding stones, arrowpoints, pottery fragments, an artifact interpreted as a pottery shaper, flakes, a firepit, and a rock alignment interpreted as a stone wall. More tools, firepits, and grinding stones are believed to be present below the surface. The site would have been occupied throughout the year. It was considered to be of high significance. The first-choice recommendation was to stop testing and eliminate the aircraft flight patterns over the site area. An alternative recommendation was to record the area thoroughly, including mapping and photographing.

A second Southern Paiute representative interpreted the site as a multipurpose camp. The site was used for activities such as making pottery and hunting tools, hunting, gathering firewood, clay, pinenuts and ricegrass, and holding dance and running ceremonies. The rockshelters (*tupikanivi*) served as shelter. Southern Paiute people continue to visit similar sites in other areas, in some instances for shelter in rock caverns, and for teaching young people about traditional lifeways. Traditional stories are associated with these sites, which are connected to lookout points on top of the mesa. Surface features and artifacts observed at the site included arrowpoints, chipped stone, grinding stones, clay which could be used for slip on pottery, a small stone in one of the rockshelters that was interpreted to be a clay smoother, ceramic sherds, plants such as pine and ricegrass, a firepit, and the rockshelters themselves. Indian pots, basket materials, arrowpoints, and animal bones were believed to be below the surface. It was also believed that a burial may be present at or near the site. All features and artifacts were judged to be of high significance. The site would have been occupied and used at various times throughout the year as needed, but especially during the winter and early spring. Overall, the site was considered to be of high significance. The first-choice recommendation was to stop testing and avoid the site area. No alternative recommendation was given.

A third Southern Paiute representative interpreted the site to be a temporary living site used for hunting and gathering. Southern Paiute people traditionally used similar sites in other areas. As a result of visiting the site, the representative stated that she intends to teach her grandchildren about the site and the traditional activities that occurred there. The site was connected to permanent living areas such as Kawich Valley by trails. Surface features and artifacts observed at the site include half a dozen burnt pot sherds, two broken points, numerous flakes, four to five rockshelters, dark soil in front of the upper rockshelter that indicated fire or hearths, and a grinding stone. Plants observed included ryegrass or ricegrass, piñón, cedar, gooseberry, sage, and Indian tea. The tinajas, or natural water tanks, on the end of the ridge

believed to be present below the surface. All features and artifacts were judged to be of high significance. The site would have been occupied at various times throughout the year. People would have stored foods such as pinenuts at this site and come back periodically. The site was not occupied continuously on a year-round basis, according to the representative. The pottery is evidence of longer occupation, however, than previous temporary camp sites visited. Overall, the site was considered to be of high significance. The first-choice recommendation was that the site should be totally avoided and left as it is. The site should be preserved in place. No alternative recommendation was given.

A fourth Southern Paiute representative interpreted the site to be a temporary seasonal refuge place or lookout site that was used for hunting, camping, and gathering. The representative estimated that as many as 100-150 people would have occupied the site for more than one month, but less than two months. Southern Paiute people continue to use similar sites in other mountain areas for hunting, camping, and gathering. Children, other relatives, and other people are taught about such sites and the traditional activities that occurred there. Traditional stories are associated with such sites. The site was connected to other living areas of the Shoshone and Paiute people, who would have come from the northwest and southwest through Lamb's Canyon, which served as a travel route to this spot. Surface features and artifacts observed at the site include large boulders and as many as 8 to 10 rockshelters. Plants observed include cedar, Indian tea, piñón, sage, milkweed, and a plant called *toxo'owatsiv*. In and around the rockshelters, the representative observed a grinding stone, flakes, a point, a pottery smoother, and animal bone. Blackened pottery sherds were interpreted to have been cooked in a fire. Blackened soil and charcoal in front of the upper rockshelter was interpreted as evidence of a hearth. More pottery sherds, tools, grinding stones, pestles, mortars, cores, and charcoal were believed to be present below the surface. In addition, burials are possibly present in the hills across the valley or on the other side of the mountain near the site. All features and artifacts were judged to be of high significance. The site was characterized as having been occupied and used from prehistoric to historic times. Pottery was interpreted as being brought to the site from another area. The site would have been occupied in spring when the snow melt provided water. The site would have been used through the summer of each year. The location was seen as special, aesthetically pleasing, and safe because of the large rocks. People would then travel to the lower valleys to the north and south of the site in winter. Overall, the site was considered to be of high significance. The first-choice recommendation was to leave the site as it is. The representative stated that she would like to return to visit the site again. An alternative recommendation was to document and film or photograph the site, remove the artifacts and repatriate them to the tribes.

A fifth Southern Paiute representative interpreted the site to be a temporary encampment and habitation site that also was used for hunting, gathering, and conducting ceremonies

as a form of communication between sites. Because of its location in high ground, it served as a lookout point and may have been used for boundary protection. People would come to the site from the north following a trail, probably through Lamb's Canyon. People would have either followed the wash up to the site or used the mesa tops, which would have been marked. Surface features and artifacts observed at the site include numerous flakes, one smoothing tool, six to eight boulder shelters and a cave shelter that was interpreted to have been used for storage. The overhangs served as sleeping areas. Ashen soil and charcoal was abundant, and the pottery was interpreted to be cooking pots. The pottery was interpreted as having been brought in from another area. A grinding or pounding stone was interpreted as a mortar. Plants observed include cedar, pine, cactus, Indian tea, and sage. Midden, ash, more flakes, and possibly a burial were believed to be present below the surface. All of the features and artifacts except for signs of animal presence were judged to be of between high and very high significance. After further thought, the representative hypothesized that the site would have been occupied from spring through fall. The site was further characterized as a good place for travel in all directions. The site provides a view that extends for miles, and was easily accessible through the canyons and hills. Overall, the site was considered to be of high significance. The first-choice recommendation was to catalog the site, fence it off, and avoid all disturbance to leave the site as it is. An alternative recommendation was to remove all artifacts, photograph the rockshelters, and analyze the site. The artifacts should be returned to the tribes and curated in a museum.

A sixth Southern Paiute representative interpreted the site to be a sacred place used as a lookout point and for hunting and gathering. Children are taught about such sites and the traditional activities that occurred there. Traditional stories are associated with such sites. The site was connected to other living areas. Surface features and artifacts observed at the site include the rockshelters, an arrowpoint, and a grinding stone interpreted to be a mortar-like pounding stone. Plants such as pine trees, rabbitbrush, buckbrush, and a species of grass were also observed. Pottery, family household items, and food remains were believed to be present below the surface, especially near the grinding stones. All features and artifacts were judged to be of high significance. The site would have been occupied all year long. Overall, the site was considered to be of high significance. The first-choice recommendation was to leave the site as it is. No alternative recommendation was given.

A seventh Southern Paiute representative interpreted the site to be a permanent living site. Southern Paiute people continue to visit similar sites in other areas. Children and other young people are taught about such sites and the traditional activities that occurred there. The site was connected to other living sites in that people would have visited other people and locations. Surface features and artifacts observed at the site include the rockshelters, grinding stones, arrowpoints, flakes, and pot sherds. More evidence of Indian habitation such as pot sherds were believed to be present below the surface. All features and artifacts were judged to be of high significance. The site would have been occupied all year long. Overall, the site was considered to be of high significance. The first-choice recommendation was to avoid use of the area for any activity; in other words, the site should be left as it is. An alternative recommendation was that one of the tribes should be chosen to curate the artifacts.

An eighth Southern Paiute representative interpreted the site to be a hunting, gathering, and camping site. Children are taught about such sites and the traditional activities that occurred there to instruct them about cultural resources and history. Traditional songs refer to such sites. The site was connected to other kinds of sites in that the tinajas may have served as a central water collecting location. Surface features and artifacts observed at the site include the [redacted]

[redacted]

tools, and pottery were believed to be present below the surface. All features and artifacts except plants and animals were judged to be of high significance. The site would have been occupied from April to June of each year. The abundance of lithics indicates a long history of use and occupation. Overall, the site was considered to be of high significance. The first-choice recommendation was to limit and control access to the site. An alternative recommendation was to collect the artifacts and curate them in a repository.

A ninth Southern Paiute representative interpreted the site to be an older pinenut camp [redacted]

A fifth Owens Valley Paiute representative interpreted the site to be a long-term, permanent residence site that was also used for gathering foods and toolmaking. Owens Valley Paiute people continue to use similar sites in other areas for camping and gathering foods. The traditional activities conducted at such sites are transmitted to young people. The site was connected to seed gathering, hunting, and pinenut areas. Indian people would travel from this permanent living area to other areas for food. Surface features and artifacts observed at the site include several different arrowpoints fashioned from jasper, obsidian, and orange and pinkish-gray stone. Pottery sherds were also observed, along with a grinding stone, and tinajas above the rockshelters. Two small rockshelters were interpreted to have been occupied by women; larger rockshelters were part of the general living area. Bones, food remains, and more arrowpoints were believed to be present below the surface. All features and artifacts were judged to be of high significance. The site would have been occupied all year long. Overall, the site was considered to be of high significance. The first-choice recommendation was to preserve the site and keep people out of it. An alternative recommendation was that if the site must be disturbed, the artifacts should be removed and put on display so that Indian people can see how their ancestors lived in the past.

A sixth Owens Valley Paiute representative interpreted the site to be a temporary living or camping area that was simply visited, but not permanently used because it was seen as too distant from other areas. Owens Valley Paiute people continue to use similar sites in Owens Valley for recreation and gathering pinenuts. Children and grandchildren are taught about such sites and the traditional activities that occurred there as part of transmitting culture and history. Traditional stories are associated with such sites. The site was connected to other living sites. Surface features and artifacts observed at the site include the rockshelters, grinding stones, flakes, and arrowpoints. The lithics were perceived to be imported trade items. Potential burials, basket remains, grinding stones, and food caches may be present below the surface. All features and artifacts were judged to be of high significance. The site would have been occupied from May through November of every year. Overall, the site was considered to be of high significance. The first-choice recommendation was to restrict access to the site area to preserve it. An alternative recommendation was to put the site on the National Register to protect it.

A seventh Owens Valley Paiute representative interpreted the site to be a seasonal, short-term shelter site that also was used for hunting, gathering, processing and storing foods, and conducting ceremonies. All other tribal members are taught about such sites and the traditional activities that occurred there. The site was connected to year-round permanent homes near water. Surface features and artifacts observed at the site include the rockshelters, arrowpoints, a grinding stone, a pottery scraping tool, and pottery fragments. More arrowpoints, grinding stones, bones, and cans were believed to be present below the surface. The features and artifacts were judged to be of between medium and high significance. The site would have been used from August through October of every year. Overall, the site was considered to be of high significance. The first-choice recommendation was to stop blasting that could potentially adversely affect the site. No alternative recommendation was given.

The eighth Owens Valley Paiute representative interpreted [redacted] boulder rockshelter site used for hunting, camping, gathering, cooking, and conducting ceremonies. As a result of visiting the site, the representative stated that she intends to teach other Indian people about the site and the traditional activities that occurred there. Traditional stories are associated with such sites. Surface features and artifacts observed at the site include the boulder caves, carving stones, pottery sherds, arrowpoints, grinding stones, a pottery smoother, and abundant white flakes. The tinajas above the rockshelters were also noted. Features and artifacts were judged to be of between medium and high significance. The site would have been used from August through November of each year. Overall, the site was considered to be of high significance. The first-choice recommendation was to stop testing and prohibit people from visiting the site in order to preserve it. No alternative recommendation was given.

Las Vegas Indian Center

One Las Vegas Indian Center representative commented on site 2B. He interpreted the site to be a major hunting and gathering camp, because of the number of rockshelters. Children and other people are taught about such sites today. Traditional stories are associated with these kinds of sites, which are connected to higher elevation pinenut camps. The size and nature of this site led to an interpretation that it served as a base camp for a relatively large Indian expedition. Surface features and artifacts observed at the site included the rockshelters, flaked stone, arrowpoints, pottery fragments, grinding stones, hand tools, plants, and covered tinajas. The representative mentioned that there was a strong possibility of the presence of burials at or near the site, more so than at site 2A. This would have been an ideal spot where elders remained while younger men went hunting. The site would have been occupied from spring through fall. It was considered to be of high significance.

Other Indian Interviews

The American Indian archaeologist representing the Chemehuevi Tribe commented on the site. He interpreted the site as a major occupation area. The site was used for permanent residence, hunting, gathering foods, and making pottery. The tinajas or water tanks were a major reason that Indian people resided here. Surface features and artifacts observed at the site include the rockshelters, arrowpoints, grinding stones, pine trees, pottery which is of one type, and lithic scatters. Basket materials were believed to be present below the surface in the rockshelters. Tools, and more ashen deposits indicating fires were believed to be present below the surface throughout the site. All features and artifacts were judged to be of high significance. The site would have been occupied all year long. Overall, the site was considered to be of extremely high significance. The archaeologist recommended that more survey work and limited testing should be done on the site in order to delineate its boundaries, and to determine if the site should be put on the National Register. An alternative recommendation was to collect the diagnostic material and curate it in a new facility in Ash Meadows so that it is accessible to the tribes.

A total of 11 interviews were conducted at the site.

Western Shoshone

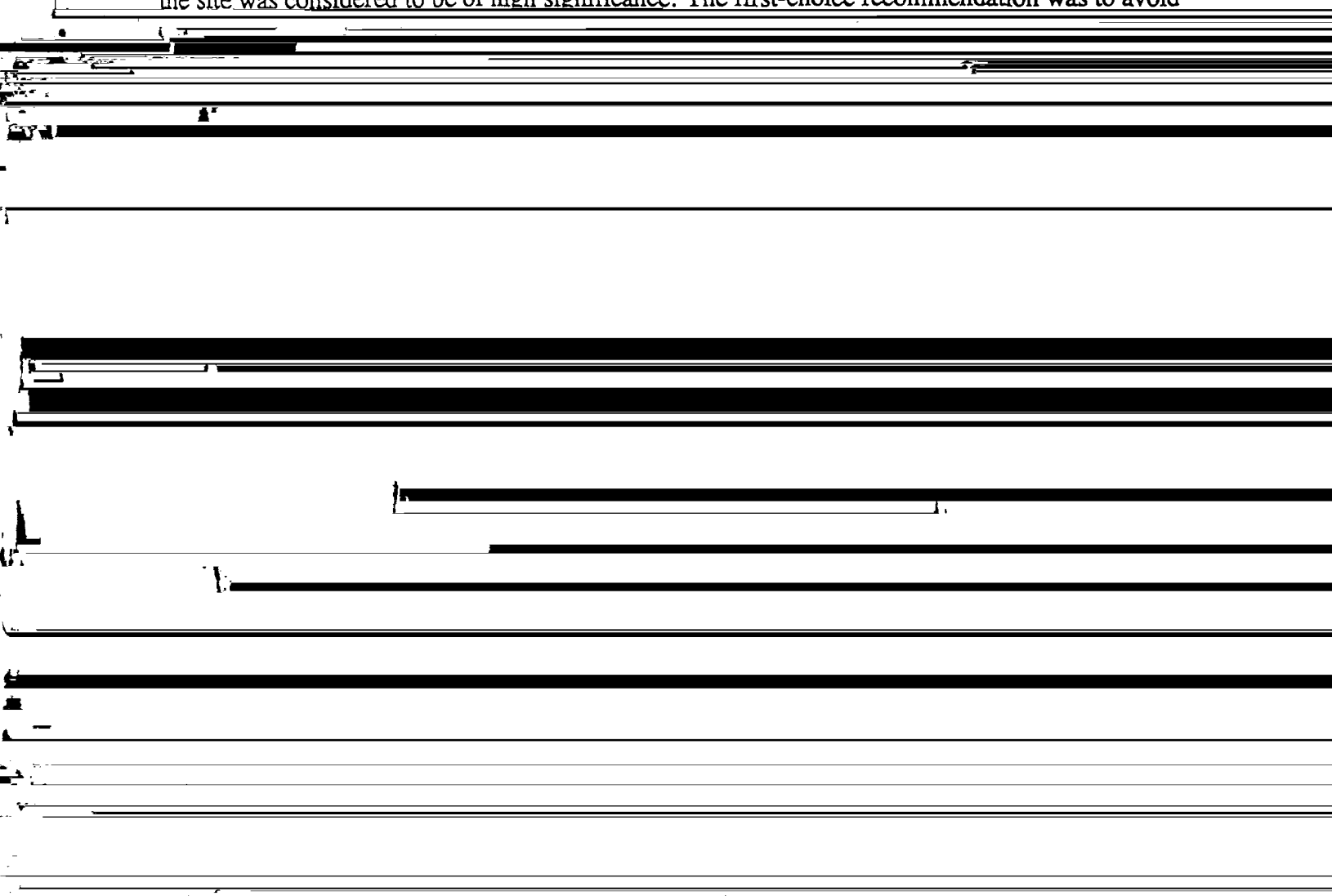
Two Western Shoshone representatives commented on the site. One representative interpreted the site to be a temporary hunting camp that would have been used overnight or up to a week. Rabbits would have been hunted at the site. Plant foods such as ricegrass (*wai*) and mentzelia (*mahgoha*) would have been gathered at the site as well. Grandchildren and other tribal members, young and adult, are taught about such sites and the traditional activities that occurred there. Traditional stories may be associated with such sites. The site was connected to more permanent camping sites like those previously seen. People would move from those spots to this site. Water transport, however, would be a major factor in the decision to come here, since hunters need to carry water. Surface features and artifacts observed at the site include plants such as meadow grass and *dosiup*, a root from the area, chips of chert and chalcedony, and obsidian nodules. The location and aesthetics of the site were seen as special and sacred. The possibility of burials being present was mentioned. All features and artifacts except for the lithics and stone artifacts were judged to be of high significance. The site would have been used at various times throughout the year as needed. Overall, the site was considered to be of high significance. The first-choice recommendation was to avoid any further ground disturbing activities at the site. An alternative recommendation was to replant the site with plants that may be destroyed due to ground disturbing activities. According to the representative, artifacts may have been removed, and cannot be replaced.

A second Western Shoshone representative interpreted the site to be one that Indian people visited briefly while traveling through the area. The site was connected to living and hunting sites by trails between locations. A few dispersed flakes were the only artifacts observed at the site. They are judged to be of low significance. The site would have been used at various times throughout the year as Indian people traveled through the area. Overall, the site was considered to be of low significance. The first-choice recommendation was to stop ground disturbing activity and testing in the area. No alternative recommendation was given.

Southern Paiute

Five Southern Paiute representatives commented on the site. One representative interpreted the site to be a pinenut camp. The site was also used for hunting. Paiute people traditionally used similar sites in other areas. As a result of visiting the site, the representative stated that she would teach her grandchildren about the site and the traditional activities that occurred there. Surface features and artifacts observed at the site include dispersed chips, flakes of obsidian and red and white stone, sage, ricegrass, cedar, abundant pine on the ridgetop, and two round obsidian nuggets. Deer sign and the presence of rabbits were also noted. Birds such as piñón jay and flicker were heard at the site. The flicker is part of religious ceremonies. In addition, the representative mentioned that her mother told her that ants such as those observed

at the site are ingested with water by people who are ill, to induce vomiting. If the ants emerge alive, the sick person will live. If the ants are dead, the same fate awaits the person. Pottery and grinding stones were believed to be potentially present below the surface. All features and artifacts were judged to be of high significance. The site would have been used every year in summer, from June through part of September. The site was characterized as very old. Overall, the site was considered to be of high significance. The first-choice recommendation was to avoid



statement was made that if the site had to be disturbed or bulldozed, the artifacts should be turned under in the process, but not removed from the site.

A second Southern Paiute representative interpreted the site to be a hunting area. Deer, antelope, elk, sage hen, and doves would have been hunted at the site. The site would have been used while traveling. Traditional stories are associated with such sites. The site was connected to site 2B. People would have moved from the shelters to hunt here. The sites may have been connected by an established trail. Surface features and artifacts observed at the site include plants such as sage, cedar, abundant ricegrass, cactus, and Indian tea. Abundant flakes and clay deposits were also observed. Features and artifacts were ranked as being of medium (clay, trail, lithics) to very high (plants, location) significance. The site would have been used in spring and fall. Other valleys would have been used as well. Overall, the site was considered to be of low significance. The first-choice recommendation was to leave the site as it is and fence it off. No alternative recommendation was given.

A third Southern Paiute representative could not definitively interpret what the site was,

representatives. They were judged to be of high significance. The site would have been used in April, May, and June of every year to harvest plants and perhaps animals. Overall, the site was considered to be of high significance because of the plants. The first-choice recommendation was to leave the site as it is.

Owens Valley Paiute

Four Owens Valley Paiute representatives commented on the site. Two representatives interpreted the site to be a camping site for pinenuts and gathering food plants. Owens Valley people continue to use similar sites in other areas for the same purposes. Children are taught about such sites and the traditional activities that occurred there. Traditional stories are associated with such sites. The site was connected to other pinenut-collecting areas. Because of

the spatially variable harvest, people would move to the spots where the crop was abundant. The aesthetics were mentioned as a special characteristic of the site. A lithic scatter was also observed. Arrowpoints and artifacts were believed to be present below the surface. All features and artifacts were judged to be of high significance. The site would have been occupied from April through October. Overall, the site was considered to be of medium significance. The first-choice recommendation was that the site be left as it is. No alternative recommendation was given.

A third Owens Valley Paiute representative interpreted the site to be a hunting and camping site. Owens Valley people continue to use similar sites in other areas for the same

Western Shoshone

Three Western Shoshone representatives commented on the site. One representative interpreted the site to be a large seasonal camping site that was used for gathering pinenuts and other foods, hunting, and conducting ceremonies. The site may have been a location for pinenut and round dances. As a result of visiting the site, the representative stated that he intends to teach his grandchildren and other tribal members about the site and the traditional activities that occurred there. The site may have served as a destination area to which many people came from their dispersed pinenut camps. Water would have been in the area, which people carried in pitch pine-covered baskets. Surface features and artifacts observed at the site include a smoothed area interpreted as a tipi floor, windbreaks, rock rings that served as tipi rings and pine nut storage

The third Western Shoshone representative interpreted the site to be a migratory area for animals. The site was used for camping and hunting. From their lower elevation settlements, hunters would precede other Indian people to the site. Women would come at a later point to harvest plants, after men had hunted animals. Western Shoshone people continue to use similar sites in other area for the same purposes. Children are taught about such sites and the traditional activities that occurred there. Traditional stories are associated with such sites. Because the site is on a migratory route for animals, movement of animals connected the site to other areas. Surface features and artifacts observed at the site include animal tracks, and several signs of deer presence including old deer beds which suggest that deer return to the site area. Grinding stones, and the structures, interpreted to be either wickiups and lean-tos, as well as lithics and grinding stones, were also observed. Logs surrounding cleared rock-ringed circles were interpreted to be old. In addition to pine trees, several medicinal plants were observed. Stored materials were believed to be present below the surface. All features and artifacts were judged to be of high significance. The site would have been used in spring and fall of every year, from April through October. The representative mentioned that she felt a personal feeling of power from the hunters at the site. In addition, the representative mentioned that she felt the presence of a friendly spirit sitting next to her at the site. The first-choice recommendation was to stop testing in the area, close off the roadways leading into the site location to restrict access, and leave the site as it is. No alternative recommendation was given.

Southern Paiute

Two Southern Paiute representatives commented on the site. One representative interpreted the site to be a hunting, gathering, and camping site. The site was used for harvesting pinenuts. Deer and rabbit would have been hunted during the winter. Rituals were also conducted at the site. Sage was used when cooking pinenuts. In addition, the representative mentioned that there are proscriptions against calling birds and other animals such as the squirrel by name when picking pinenuts. If they are called by name, the harvest will be small and there will be no nuts in the shell. Southern Paiute people traditionally used similar sites in other areas when hunting and camping. As a result of visiting the site, the representative said that she intended to teach her grandchildren about the site and the traditional activities that occurred there. The site was connected to permanent living areas in Beatty, Pahrump, and Ash Meadows. People would follow trails to camp, gather and hunt at this site. Surface features and artifacts observed at the site include plants such as sage, ricegrass, cactus, piñón, cedar, and Indian tea. Flakes, an artifact with worked sides that was interpreted to be either an arrowpoint, knife, scraper, or punch, a quartz core, and a rock ring interpreted to be a piñón cache were also observed. Four structures interpreted to be windbreaks or huts were observed, in addition to two grinding stones, a fiber shredder for basketmaking, a spoon, and one rock slab covered pit or depression that was interpreted to be a storage pit. The windbreak/hut would have held two people. Two more individuals may have occupied the rock ring if it served as a shelter. In all, eight to ten people may have occupied the site. A blue jay was heard and a lizard was observed. Given that one small bowl was discovered at the site, pottery, arrowpoints, and a possible burial with grinding stones as grave goods were believed to be present below the surface. The representative noted that if a burial were present at the site, Indian people would have moved

to a different location and not used a site where someone had died. All features and artifacts were judged to be of high significance. The site would have been occupied from June through December. Overall, the site was considered to be of high significance. The first-choice recommendation was to avoid the site and leave it as it is. The possibility of a burial at the site makes it more important. An alternative recommendation was to remove the artifacts and curate in a tribal museum. If it is determined that a burial is present at the site, it should not be moved.

The second Southern Paiute representative interpreted the site to be a temporary stopover camp, used for hunting and gathering pinenuts. Southern Paiute people continue to use similar sites in other areas for hunting. Children and family me[redacted] the traditional activities that occurred there so that they learn about their culture and history. Traditional stories are associated with such sites. The site was connected to other living areas. Indian people would travel between a series of sites while hunting and gathering. Surface features and artifacts observed at the site include the rock rings and structures interpreted as individual campsites, rock piles or cairns, and lithics. All of these are said to be obvious signs of Indian presence. Possible burials were believed to be present below the surface. All features and artifacts except the rock rings were judged to be of high significance. The site would have been occupied in spring (April and May) and fall (September and October) of each year. Overall, the site was considered to be of high significance. The first-choice recommendation was to stop testing in the area and seal it off to restrict access. An alternative recommendation was for all parties to agree on a location to curate the artifacts.

Owens Valley Paiute

Three Owens Valley Paiute representatives commented on the site. Two representatives interpreted the site to be a pinenut camp. Owens Valley Paiute people continue to use similar sites in other areas for the same purpose. Children are taught about such sites and the traditional activities that occurred there. Traditional stories are associated with such sites. The site was connected to other camp sites, which are dispersed in the uplands, and in various years people harvested pinenuts at various sites. Surface features and artifacts observed at the site include the wood and brush structures interpreted to be wickiups, abundant pinenuts, Indian tea, the rock rings, and a lithic scatter. All features and artifacts except for the lithic scatter were judged to be of high significance. The site would have been occupied from April through October of various years, depending on the pinenut crop. Overall, the site was considered to be of high significance. The first-choice recommendation was to leave the site as it is and avoid any disturbance. No alternative recommendation was given.

The third Owens Valley Paiute representative interpreted the site to be a hunting, gathering, and camping site. Owens Valley Paiute people continue to use similar sites in other areas for the same purposes. The representative described the site as "having a good feeling to it." The representative could not interpret with full confidence the function of the rock piles, but a worked flake and a grinding stone, along with the wood and brush structures interpreted as windbreaks, provided evidence that Indians occupied the site. Children are taught about such sites and the traditional activities that occurred there. Traditional stories are associated with such

sites in deer hunting areas. The site was connected to others in the area. Surface features and artifacts observed at the site include the grinding stone, the windbreaks, a tool for shredding basket material, and a cleared area bound by an arrangement of rocks. The possibility of a burial below the surface at or near the site was noted. Plants observed included ricegrass. Evidence of deer was also observed. All features and artifacts were judged to be of high significance. The site would have been occupied from April to October each year. Overall, the site was considered to be of high significance. The first-choice recommendation was to set the area off limits and leave it as it is.

A total of five interviews were conducted on the site.

Western Shoshone

One Western Shoshone representative commented on the site. He interpreted the site to be a rabbit hunting area that was used for small-scale rabbit (*kamu*) drives by only a few hunters using bows and arrows. As a result of visiting the site, the representative stated that he intends to teach his grandchildren and other relatives about the site and the traditional activities that occurred there. The site was likely connected to previous sites visited. According to the representative, permanent camps were connected, and the same people would come to this area to hunt. The site may also be connected to other rabbit hunting and pinenut camps in the area. Surface features and artifacts observed at the site include a grinding slab that was interpreted to have been used only for a short time. Any rock with a flat surface could be used for grinding meal, including deer meat, but flat rocks were not used for processing rabbit. Five or six scattered flakes and plants such as ricegrass and sage were also observed. Plants and animals were judged to be of high significance. The stone artifacts were judged to be of medium significance. The site would have been used as needed, but especially in the fall (September to November) of each year when the rabbits are fat. Overall, the site was considered to be of medium significance. The first-choice recommendation was to leave the site as it is. No alternative recommendation was given.

Southern Paiute

One Southern Paiute representative commented on the site. She interpreted the site to be a hunting site for deer, rabbit, cottontail, and perhaps quail. The site may also have served as a stopover on a travel route from 40 Mile Canyon. The representative mentioned that her family traditionally used this site. Her father hunted in the immediate area, and other family members gathered sage and ricegrass seeds. They traveled from 40 Mile Canyon to Oak Spring and the mountains to harvest pinenuts. She learned about the site from her mother and father, and is currently teaching her grandchildren about the site and the traditional activities that occurred there. The site was connected to living sites in more resource-rich areas such as 40 Mile Canyon and Oak Spring. The valley served as a trail or route through the area running from 40 Mile Canyon to Oak Spring. Surface features and artifacts observed at the site include a few flakes,

and a flat stone that was interpreted as not being a grinding stone. Sage, ricegrass, and cactus, in addition to deer sign, were also observed. Small grinding stones and points were believed to be present below the surface. All features and artifacts except the lithic scatter were judged to be of high significance. The site would have been used in winter and spring (January to June) of each year. Overall, the site was considered to be of high significance. Despite the lack of abundant artifactual material, the site was considered high because of its travel route function. The first-choice recommendation was to avoid further disturbance at the site and leave it as it is. An alternative recommendation was to remove recovered artifacts and curate them in a tribally owned museum.

Owens Valley Paiute

Three Owens Valley Paiute representatives commented on the site. Two representatives interpreted the site to be a hunting location that Indian people used, but did not occupy, because it is out in the open. The site was probably used for hunting rabbits. The site was likely connected to other sites as a transition place on the way to somewhere else. Surface features and artifacts observed at the site include an abundance of sage, a grinding stone, and a lithic scatter. The possibility of a burial was also mentioned. All features and artifacts were judged to be of high significance. The site would have been used in spring (April and May) and fall (September to November) of each year. Overall, the site was considered to be of high significance. The first-choice recommendation was to leave the site as it is. No alternative recommendation was given.

The third Owens Valley Paiute representative interpreted the site to be a hunting site. Owens Valley people continue to use similar sites in other areas for the same purpose. Children and grandchildren are taught about such sites and the traditional activities that occurred there. Traditional stories concerning hunting are associated with such sites. The site was connected to other camps and residences, from which people periodically moved to hunting areas for deer and rabbit. Surface features and artifacts observed at the site include flakes and worked chips. The location was mentioned as being special. All features and artifacts were judged to be of high significance. The site would have been used during the fall hunting season (August through November) of each year. Overall, the site was considered to be of high significance despite the fact, according to the representative, that it is no longer available to Indian people to use. The first-choice recommendation was to leave the land and the site as it is.

A total of eight interviews were conducted on the site.

Western Shoshone

One Western Shoshone representative commented on the site. He interpreted the site to be a ceremonial site. It seemed to the representative that all of the caves in the area were connected, and all are perceived to have some ceremonial function. Special activities were

conducted in the caves. The rock art was perceived as writing and would not have been put on walls without a purpose. The water was also seen as significant and permanent, especially because it comes out of the rocks. Water was taken from the site. As a result of visiting the site, the representative stated that he intends to teach children and other relatives about the site and the traditional activities that occurred there. The site was connected to nearby rockshelters and major camps like Whiterock Spring and Tippipah Spring, in addition to Captain Jack. According to the representative, people would come here from major camps to conduct ceremonies, especially boys' ceremonies, perhaps indicating initiation. Males would sit in the rockshelters during the ceremonies. Surface features and artifacts observed at the site include water basins and the petroglyphs. The location was seen as a major factor in why ceremonies were conducted at the site. Plants observed include medicinals such as sage, cedar, Indian tea, and arrowweed. All features and artifacts are judged to be of high significance. The site would have been used at the end of each winter and early spring when people came down from the uplands to lower elevation camps. Overall, the site was considered to be of high significance because it was perceived as a ceremonial place. The first-choice recommendation was to close the site off to all activity. No alternative recommendation was given.

Southern Paiute

Four Southern Paiute representatives commented on the site. One Southern Paiute representative interpreted the site to be a temporary residence. The site was used for hunting and gathering and served as a stopover place while traveling. Southern Paiute people continue to visit similar sites in other areas to conduct rituals and ceremonies surrounding water, and also for social purposes. Traditional songs are associated with such sites. The site was connected to all of the other sites visited. According to the representative, "it's in line with everyone of them." More specifically, this site was connected to the boulder rockshelters site. People would travel from one site to the other by trails. The representative noted that Chemehuevi people put trails in their basketry. The designs are related to trails and sites like this. Trails are a frequent topic of folklore and art. Surface features and artifacts observed at the site include abundant timber, and plants such as berry bushes that attract a variety of birds, pine trees, acorn, Indian tea, and sparse ricegrass. The tinaja is tear drop or oblong, oval shaped and slanted at an angled toward the back wall. The water in the tinaja was described as being one foot deep with a lot of algae. Birds were observed drinking the water. In the rockshelter, the upper ceiling is charred with smoke, interpreted as resulting from a fire or torch. The rock art was described as prehistoric, and was interpreted to be a map to another site. There was the perception of an obvious trail through the area from the rock art, leading east and west. The circles through [redacted] bars pointing in all four directions. Center points are in the circles, and the lines are interpreted as possibly pointing to other sites. All features and artifacts except for the trail, plants, view and location are judged to be of very high significance. The site would have been occupied in spring and summer of each year. The rocks would be too slippery for use in the winter. The site may have been used by at least three, and perhaps more, tribes. The site was further characterized as a spiritual area. The natural beauty and serenity stimulated good feelings on the part of the representative. Overall, the site was considered to be of high significance. The first-choice recommendation was to fence the site off, record and photograph it. The government should be

informed that the site is important to Indian people. Further study should be conducted, including a complete, comprehensive analysis of the petroglyphs. Studies should not result in disturbance of any kind. No alternative recommendation was given.

A second Southern Paiute representative interpreted the site to be a water harvesting and ritual site. The site was also used for camping, hunting, and gathering. The representative mentioned that traders could have used the site as well. Her grandfather was a trader who married a Chemehuevi woman, and he worked the entire Colorado River area. Children, family members, and other tribal members are taught about such sites and the traditional activities that occurred there. Traditional stories are associated with such sites. The site is connected to a site visited earlier with the wickiup structures. People would travel from that site to here to gather water. The water was then carried back in water tight baskets to the other camps by trails over the hills. Surface features and artifacts observed at the site include plants such as cedar, sage, oak, Indian tea on the path leading to the site, and the water catchment. Animals observed include chipmunk and birds. The tinaja was interpreted to be like a spring in the cave. The oblong tinaja contains stale water about 5 inches deep filled with rocks and other debris. Compared to a life-sustaining wash basin, it was said to be extraordinary. A possible point was spotted in the water. The rock art consisted of red drawings and rock drawings. They are perceived to be very old due to their faded appearance. One of the images is turtle-shaped, about four-by-three inches in size with the legs. A second image was interpreted as a plant or a bird. The red paint may also be a deep brown. The suggestion was also made that it could be blood. It was interpreted to be a ceremonial painting of a body. The painting may have been made by a medicine man as part of a vision ceremony to pray and help his tribe. Sage would have been burned as part of this ceremony as well. The site was said to be inhabited by spirits, but different spirits than water babies. The representative noted that shamans are able to talk to the spirits. These comments were made in a subdued voice to avoid waking the spirits up. Arrowpoints were believed to be present below the surface in a small area of gravel. In addition, nodules and pottery sherds may also be buried in this area. The possibility of offerings in the water was also noted. No burials were perceived to be present, in that the soil was said to be the wrong type and the area too steep. All features and artifacts except plants were judged to be of high significance. The site would have been occupied in the summer because it faces away from the sun and is entirely shaded. One or two people would have stayed at the site for a week. Overall, the site was considered to be of high significance because of the water and the ceremonial functions associated with the rock art. The first-choice recommendation was to photograph and document the site and its contents. An alternative recommendation was that if removable items are found, they should be transported to a safer environment so that Indian people can visit and view them and others can study them. Given the age and immobility of the drawings, the representative suggested etching them or photographing them. Carving them out would result in crumbling because of their perceived age.

A third Southern Paiute representative interpreted the site to be a very sacred place because of the water. The site was called "water cave in a cliff," or *timpipah tinkan* in Paiute. The site was used for gathering water, foods, and camping. The site would have been used mostly by women, who were the water carriers. The traditional way of using the water is to boil

it and use it for curing and cooking. With regard to curing, the water became "holy water." When people drink it, it gets into their bloodstream and makes their heart pure. The moisture goes into their bones. *Pikabah* is the name of the water place. Water was transported in willow water baskets. It was boiled in pots for cooking. The representative said that his wife's people would know this place. He also perceived that there was a trail up here, and referred to it as *nuwuvu tuutu*. Other Paiute people are taught about such sites and the traditional activities that occurred there. Traditional stories are associated with such sites. The site was connected to other living places, pinenut and hunting camps, and storage sites. With regard to the petroglyphs, the representative stated that whoever put the drawings in the rockshelter drew what he saw. Surface features and artifacts observed at the site include a possible trail, the rockshelters, the tinaja, and the petroglyphs (Paiute *tovop*). The petroglyphs represent something the maker saw or experienced. The maker may have seen something that had sacred meaning. By putting them next to the water it makes the place very sacred. The maker was the only one who knows the exact meaning. Birds also were observed, and noted as an indicator of nearby water. There may be a lookout point, or *piniwinaka*, nearby. All features and artifacts were judged to be of high significance. The site would have been used in spring (March through May) when there was abundant water. The representative mentioned that the "feeling" of this site was strong and that the feelings were good. Overall, the site was considered to be of high significance because of the water. The first-choice recommendation was to leave the site alone and not disturb it. No alternative recommendation was given.

A fourth Southern Paiute representative interpreted the site to be a harvesting and camping area. The site was used for permanent residence, camping, hunting, and gathering. Children and other relatives are taught about such sites and the traditional activities that occurred there. Traditional stories are associated with such sites. The site was connected to the other sites visited. Surface features and artifacts observed at the site include rock rings, points, pinenuts, and a grinding stone. Additional evidence of Indian habitation was believed to be present below the surface. All artifacts and features are judged to be of high significance. The site would have been occupied all year long. Overall, the site was considered to be of high significance. The first-choice recommendation was to avoid activities in the site area. The site should be fenced off and access restricted. An alternative recommendation was that the tribes should receive the artifacts from the site.

Owens Valley Paiute

depicting a sunrise and turtles, were observed. The site provided a secure location for Indian people. All features and artifacts (everything, *tui'hi*) were judged to be of high significance. The site would have been occupied in spring and fall, from May through October of each year. Overall, the site was considered to be of high significance, primarily due to the presence of water, the petroglyphs, and the rockshelters. The first-choice recommendation was that the area be left alone.

A third Owens Valley Paiute representative interpreted the site to be a hunting, gathering, camping site with rockshelters. The rock art served as some kind of communication. Owens Valley Paiute people continue to visit similar sites in other areas to see them and teach their children about tribal history. The representative remembers her aunt taking her to visit such places. The representative has taught her children and grandchildren about such sites and the traditional activities that occurred there and, as a result of visiting this site, stated that she intends to teach other relatives as well. The site was connected to other hunting and camping locations. Surface features and artifacts observed at the site include the rockshelters and the petroglyphs, one of which was interpreted to be a medicine wheel. A red pictograph was also noted. The water and location were also mentioned as important. All features and artifacts were judged to be of high significance. The site would have been occupied from June through October. People may have visited the site to view the rock art throughout the year. Overall, the site was considered to be of high significance because it was the only site that has rock art. The first-choice recommendation was to leave the site as it is. No alternative recommendation was given.

A total of seven interviews were conducted at the site.

Western Shoshone

One Western Shoshone representative commented on the site. He interpreted the site to be a ceremonial rockshelter. The site was not used for living or camping. Children and grandchildren are taught about such sites and the traditional ceremonial activities that occurred there. The site was connected to the Tongue Wash Poh site, which was interpreted to have been used as part of the same ceremony. The site was also connected to Captain Jack Spring and other living areas. Surface features and artifacts observed at the site included the rockshelter, a walking stick, pottery fragments, and flakes. Arrowpoints were believed to be present below the surface. All features and artifacts were judged to be of high significance. The site would have been used in later winter and spring of each year. Overall, the site was considered to be of high significance. The first-choice recommendation was to close the site area off and stop testing. No

Southern Paiute

Three Southern Paiute representatives commented on the site. One representative interpreted the site to be a family camp rockshelter. The site was used for hunting, gathering, and conducting ceremonies. Children, other relatives, and other tribal members are taught about such sites and the traditional activities that occurred there. Traditional stories are associated with such sites. The site was connected to the Tongue Wash Poh site and the other rockshelter sites in the area. These sites would have been connected by a trail. Surface features and artifacts observed at the site include loose rock, charcoal, flakes, charred animal bones, an area of dark soil interpreted as a firepit, and red paint pigment on the wall of the rockshelter that was not interpreted. Plants observed included cut wood, Indian tea, sage, cedar, and Johnson grass, a plant that was noted to be a water plant, and another plant that was identified as either wild asparagus or sego lily. More bone, fireplaces, flakes, points, and dye residues were believed to be present below the surface. The site may have served as a stopover or a checkpoint, in that the representative noted that there are two valleys in front of the site. All features and artifacts were judged to be of high significance. The site would have been occupied in spring when the snow melted and before the heat of the sun became too intense, given that the site faces south. The site, therefore, was not likely to be used in summer. Eight to ten people would have occupied the site for two weeks at a time. Overall, the site was considered to be of high significance. A first-choice recommendation was that if the site is excavated, everything should be put back in its natural place after the research is completed. An alternative recommendation was to photograph or videotape the site and its features and artifacts, analyze them, and return everything to its natural state. Policies should be developed for protection with the participation of Indian people in the policymaking process.

A second Southern Paiute representative interpreted the site to be an encampment site used for hunting, gathering, and conducting ceremonies. Southern Paiute people continue to use similar sites in other areas for the same purposes. Traditional stories are associated with such sites. The site was connected to the Tongue Wash Poh site. It was described as a good hunting

described as slick. More ash, flakes, tools, and points were believed to be present below the surface. Potential burials were mentioned, based on the observed bone fragment that could not be positively identified. All features and artifacts except the pigment were judged to be of high or very high significance. The site would have been occupied in spring, summer and fall. Overall, the site was considered to be of high significance. The first-choice recommendation was to catalog and photograph the site, and fence it off. An alternative recommendation was to remove the artifacts and take them to a museum for storage and analysis. Following analysis, the artifacts should be transferred to a Paiute tribal museum.

The third Southern Paiute representative interpreted the site to be a permanent living area that was also used for hunting and gathering. Southern Paiute people continue to use similar sites in other areas, such as Kanab Canyon north of Kanab, to visit out of respect for the ancestors. Children are taught about such sites and the traditional activities that occurred there. Traditional stories are associated with such sites. The site was connected to the Tongue Wash Poh site. According to the representative, Indian people lived at this site and gathered their water from other places such as the Tongue Wash tinaja. Surface features and artifacts observed at the site include the rockshelter, the red paint on its wall, charcoal, and pole that were needed for a windbreak. Poles would be placed upright at the entrance of the rockshelter to protect two families who occupied the shelter. The possibility of burials at or near the site was mentioned. All features and artifacts were judged to be of high significance. The site would have been occupied permanently throughout the year. Overall, the site was considered to be of high significance. The first-choice recommendation was to leave the site alone and avoid disturbance. No alternative recommendation was given.

Owens Valley Paiute

Three Owens Valley Paiute representatives commented on this site. Two representatives interpreted the site as a hunting and gathering campsite. Children, grandchildren, and other tribal members are taught about such sites and the traditional activities that occurred there. Traditional

stone (*tusu*), flakes, animal bones, red markings on the rockshelter wall, and a bundle of rolled sinew. Tools were believed to be present below the surface. All features and artifacts were judged to be of high significance. The site would have been used from September through November of each year. Overall, the site was considered to be of high significance. The first-choice recommendation was to close off the roads and prevent easy access to the site. An alternative recommendation was to collect the artifacts that can be removed and curate them in a safe place, implying a museum.

A total of four interviews were conducted on the site.

Western Shoshone

Two Western Shoshone representatives commented on the site. One representative interpreted the site to be a hunting area used for rabbit drives. Western Shoshone people continue to use similar sites in other areas as stopover camping places. Children and grandchildren are taught about such sites and the traditional activities that occurred there. Traditional stories about rabbit drives are associated with such sites. The site was connected to living areas. Because of its low elevation, Indian people used the site as a stopover place while traveling. Surface features and artifacts observed at the site included deer tracks and beds, flakes, and other lithics. The representative noted that all the points had been removed. Evidence of camping and food storage areas were believed to be present below the surface. The location was seen as special, in that flat areas were preferred for processing food. The breeze in open areas provided comfort, and the absence of trees prevented birds from being bothersome. All features and artifacts were judged to be of high significance. The site would have been occupied in spring (April and May) and fall (October and November) of each year. Overall, the site was considered to be of high significance. The first-choice recommendation was to avoid further disturbance of the site area and stop testing. No alternative recommendation was given.

The second Western Shoshone representative interpreted the site to be a hunting area used by men. Western Shoshone people continue to use similar sites in other areas for the same purpose. Children and grandchildren are taught about such sites and the traditional activities that occurred there. Traditional stories are associated with such sites. The site was connected to living areas, from which people moved to hunt in a cyclical pattern. Surface features and artifacts observed at the site include sagebrush and cedar, and abundant flakes and points. Storage caches may be present below the surface, according to the representative. All features and artifacts were judged to be of high significance. The site would have been used in spring (April and May) and fall (October and November) of each year. Overall, the site was considered to be of high significance. The first-choice recommendation was to stop testing and road construction, restrict access to the site area, and leave the site as it is. No alternative recommendation was given.

Southern Paiute

One Southern Paiute representative commented on the site. He interpreted the site to be a hunting area used by men. Southern Paiute people continue to use similar sites in other areas for the same purpose. Children and other family members are taught about such sites and the traditional activities that occurred there so that they may learn something of their culture and history. Traditional stories are associated with such sites. The site was connected to other food gathering and hunting places, as well as living areas. Flakes and arrowpoints were observed on the surface at the site. The representative also described the site as a waiting and game watching area. All features and artifacts except plants and animals were judged to be of high significance. The site would have been used in the cooler months of fall and winter (October through December). Overall, the site was considered to be of high significance. The first-choice recommendation was to stop testing and restrict access to the site area. An alternative recommendation was to allow the Indian people to have the opportunity to decide the disposition of artifacts at the site.

Owens Valley Paiute

Owens Valley Paiute representatives did not visit this site.

Las Vegas Indian Center

The Las Vegas Indian Center representative did not visit this site.

Other Indian Interviews

The American Indian archaeologist representing the Chemehuevi Tribe commented on the site. He interpreted the site to be a game watching site that men used for hunting. Traditional stories are associated with such sites. The area was typical of one where Indian people would wait for migrating game. Surface features and artifacts observed at the site include flakes of different kinds and materials, broken points, and vegetation typical of the area. Some of the same artifacts may be present below the surface. All features and artifacts were judged to be of high significance. The site would have been used at various times throughout the year, but especially in spring and fall. Overall, the site was considered to be of high significance. The first-choice recommendation was to conduct an archaeological survey to determine the time periods of occupation from the points present. An alternative recommendation was collection of diagn[redacted] arti[redacted] a plant and animal survey.

Patterns of Native American Site Interpretation

Analysis of the individual site interviews reveals some general patterns of consistency at the level of overall site interpretation for the majority of sites visited. The patterns are derived from an examination of specific interview questions concerning (1) the type of site as defined by the tribal representative, (2) the function(s) of a site, and (3) the length of time a site was used or occupied. This qualitative ethnographic analysis differs from the quantitative examination of site interpretation patterns discussed in the next chapter in that the quantitative analysis is

Table 3.2. Site Interpretation

Ethnic Group (# Interviewed)	Pinenut Camp	Other
Owens Valley Paiute (8)	5	3
Western Shoshone (5)	5	0
Southern Paiute (11)	7	4*
Las Vegas Indian Center (1)	1	0
Other Indian (1)	1	0
TOTAL (26)	19	7*

* includes one No Response

For site eight out of 11 respondents interviewed interpreted the site to be one of permanent occupation. The breakdown of interpretation patterns by ethnic group for site 1C is shown in Table 3.3.

Table 3.3. Site Interpretation

Ethnic Group (# Interviewed)	Permanent Occupation	Other
Owens Valley Paiute (4)	3	1
Western Shoshone (1)	1	0
Southern Paiute (5)	4	1
LasVegas Indian Center (1)	0	1
Other Indian (0)	0	0
TOTAL (11)	8	3

Fourteen out of 25 representatives interviewed about interpreted the site to be a temporary hunting and gathering site. The breakdown of interpretations by ethnic group for site 2B is shown in Table 3.4.

Table 3.4. Interpretation

Ethnic Group (# Interviewed)	Temporary Hunting-Gathering	Other
Owens Valley Paiute (8)	5	3
Western Shoshone (5)	2	3
Southern Paiute (10)	6	4
Las Vegas Indian Center (1)	1	0
Other Indian (0)	0	1
TOTAL (25)	14	11

For six out of eight representatives interpreted the site to be a seasonal or temporary hunting, gathering, and camping site. Those that differed interpreted the site exclusively as a pinenut camp with no reference to hunting. The breakdown of interpretations by ethnic group is shown in Table 3.5.

Ethnic Group (# Interviewed)	Temp. Hunt/Gather/Camp	Other
Owens Valley Paiute (3)	1	2
Western Shoshone (3)	3	0
Southern Paiute (2)	2	0
Las Vegas Indian Center (0)	0	0
Other Indian (0)	0	0
TOTAL (8)	6	2

All five representatives who were interviewed about site interpreted the site to be a hunting site. The breakdown of interpretations by ethnic group is presented in Table 3.6.

For site all four people interviewed about the site interpreted it to be a hunting site. The breakdown of interpretations by ethnic group is shown in Table 3.7.

Table 3.6. Site Interpretation

Ethnic Group (# Interviewed)	Hunting	Other
Owens Valley Paiute (3)	3	0
Western Shoshone (1)	1	0
Southern Paiute (1)	1	0
Las Vegas Indian Center (0)	0	0
Other Indian (0)	[redacted]	0
TOTAL (5)	5	0

Table 3.7. Site Interpretation

Ethnic Group (# Interviewed)	Hunting	Other
Owens Valley Paiute (0)	0	0
Western Shoshone (2)	2	0
Southern Paiute (1)	1	[redacted]
Las Vegas Indian Center (0)	0	0
Other Indian (0)	0	0
TOTAL (3)	3	0

Variation

For sites a variety of interpretations were given by the tribal representatives. Interpretations or the overall function of site varied among representatives, despite the fact that many of them interpreted the artifacts as grave goods associated with a burial at or near the site. Among Western Shoshone representatives, interpretations of the site included a storage area, a permanent hunting, camping, and trading site, and a ceremonial

site.

For all five Western Shoshone representatives generally interpreted the site to be some type of family camp, but differed in their interpretations of whether the site would have been occupied permanently or during the winter. Among Southern Paiute representatives interpretations varied between permanent summer home, pinenut camp, temporary hunting and residence, single family summer seasonal home, and post-cutting camp. Owens Valley Paiute representatives differentially interpreted the site as a permanent dwelling, permanently used sweathouse, temporary summer season dwelling, and a short-term campsite. The LVIC representative perceived the site to be a seasonal camp, and the Indian archaeologist interpreted the site to be a permanent winter dwelling.

Interpretations of varied between temporary hunting and gathering camp, gathering-only camp, hunting-only camp, and a stopover site with differential interpretations of length of occupation and use, which ranged from a single season to permanent. Two tribal representatives of different ethnic groups were not able to confidently interpret what the site was.

For there were three interpretations of the site as some kind of ceremonial or sacred site (one involving the collection of water). The other five representatives interpreted the site as multi-purpose hunting, gathering, and camping sites, but they varied in their interpretations regarding length of occupation and use. Four considered the site as a temporary site, one perceived the site to be permanently occupied.

For there was one interpretation of the site as a ceremonial site, two interpretations of the site as a hunting, gathering, camping, and ceremonial site, three interpretations of the site as a seasonal hunting, gathering, and camping site with no ceremonial function, and one interpretation of the site as a permanent living site with hunting and gathering functions.

For these five sites, there appeared to be both internal variation--that is, within an ethnic group--and variation between ethnic groups. For the other six sites (just over half of the total number of sites visited), however, an overall pattern of clear consistency in interpretation among tribal representatives of the same ethnic group, as well as between representatives of different ethnic groups, exists. Such a pattern supports the argument that tribal people are culturally well qualified and competent to provide valid interpretations of ancestral sites and material culture remains.

CHAPTER FOUR

ETHNOARCHAEOLOGY: A STATISTICAL PERSPECTIVE

Representatives of the seventeen Native American tribes interpreted and expressed concerns about various archaeology sites potentially impacted by the underground atomic testing program on Pahute and Rainier Mesas. The previous chapter presents a site-by-site analysis of what individual tribal representatives said. This chapter views the same issue from a statistical perspective. The thoughts of tribal representatives are simply added up to find the patterns of

for the twentieth century, since the site has been used for hundreds of years. He uses culturally based knowledge and logic when he interprets artifacts from the more distant past.

[redacted]

all time periods when sites were occupied or used. Instead, Indian people place sites and artifacts into generally known categories, and assign meanings based on how such sites are used or would be used by living Indian people. This is a process of extrapolation using culturally-based knowledge and logic. Indian people generally understand about older uses and meanings of sites and artifacts, but these are secondary in the interpretation. Categories created by living Indian people generally involve a shift in function and certainly a shift in why the site is culturally significant to living Indian people. For example, a place that five hundred years ago was used by Western Shoshone or Southern Paiute people to prepare *wa'ai* (*Indian rice grass, Stipa hymenoides*) for food, is more valued today as a place to learn about the activities of one's grandmothers than it is a place to process food. Despite the change in function, the place

continues to have meaning and function in Indian culture. Therefore, ethnoarchaeology tends to be more about the role that archaeological sites play in the culture of living peoples, than an exact reconstruction of the uses and meanings of these sites hundreds of years ago.

thousands of sites within the Pahute and Rainier Mesas study area, and only a small fraction were visited during the ethnoarchaeology study. To what extent, then, can the individual site responses from this non-random set of places be used to project the identity and meaning of all sites in the study area? The following analysis is presented as an effort to advance tentative

the question was answered as being about *sites like the one being visited*. The Indian person drew upon past experience with similar sites located elsewhere in southern Nevada or in their home territory to answer the question. All Indian people believed that members of their ethnic group once used sites in the study area. Indian people believed that members of their ethnic group once used 84.7% of the sites visited; 2.5% of the sites visited were viewed as not having been used by members of the person's ethnic group. For 12.7% of the sites, the Indian representatives did not know whether or not it was used by their ethnic group members in the past. Some tribal representatives had either first-hand or oral history knowledge of the exact sites being visited, but most people did not. Thus the following analysis is primarily about sites similar to the site being visited.

Table 4.1 cross-tabulates all sites visited with how the tribal representatives perceived members of their ethnic group used the sites in the past. A total of 455 uses were recognized as being associated with the sites visited. The most commonly mentioned use was gathering foods (26.4%), followed by hunting (23.5%), camping (22%), ceremony (11.4%), permanent residence (7.3%), and trade (2.2%).

Most sites were seen as having more than one use. Four sites were seen as having at least six of the seven possible uses. Four other sites had from three to five uses. Only sites 3B and 3E which are situated on a broad and arid, open plain at the extreme western margin of the study area, were seen as having only one use, hunting. It is interesting to note that these two sites were viewed by most of the Indian people who visited the sites as having no clear functions at all, even though a few arrowheads had been found there thus marking the presence of Indian people sometime in the past. Two Indian people who visited 3B said that their ethnic group did not use locations like these at all. Other Indian people suggested that groups of tribal representatives who would visit later not be brought to these locations, but be taken to more interesting sites instead.

Table 4.2 cross-tabulates all sites visited with how the family of the Indian person being interviewed used sites like this in the past. A total of 268 uses were recognized as being associated with past use by family members. This is 59% of the total uses mentioned for past ethnic group use. The most commonly mentioned use was gathering foods (31%) followed by camping (26%), hunting (24%), ceremony (7%), permanent residence (3%), and trade (1%). Although the rank order of the past family uses generally remained the same as the past ethnic uses, some uses remained approximately the same while other uses appeared much less frequently. For example, past family gathering foods and camping were mentioned more frequently, while hunting was mentioned about the same percentage. Permanent residence, ceremonies, and trade were mentioned about half as often as for past ethnic use. There are some interesting working hypotheses about the differences between past family and ethnic group uses of the same types of sites, but these will be held for discussion in a later draft of this report.

Table 4.1. Past Ethnic Group Use of Sites

SITE	Permanent Residence	Camping	Farming	Ritual/ Ceremony	Gathering Foods	Hunting	Trade	Other	Total
1A	2	21	1	11	19	18	2	7	81
1B	0	22	0	8	23	15	1	5	74
1C	8	4	0	9	11	10	4	3	49
2A	13	13	0	9	20	16	2	2	75
2B	7	16	0	7	21	18	1	10	80
2C	0	5	0	0	6	5	0	1	17
3A	0	8	0	2	7	6	0	0	23
3B	0	0	0	0	0	3	0	1	4
3C	2	6	0	3	7	6	0	3	27
3D	1	5	0	3	6	6	0	0	21
3E	0	0	0	0	0	4	0	0	4
Total	33	100	1	52	120	107	10	32	455
Total (%)	7.3%	22.0%	0.2%	11.4%	26.4%	23.5%	2.2%	7.0%	100%

Table 4.2. Past Personal Use of Sites

SITE	Permanent Residence	Camping	Farming	Ritual/ Ceremony	Gathering Foods	Hunting	Trade	Other	Total
1A	0	12	0	5	13	9	2	5	46
1B	1	15	0	3	17	8	0	3	47
1C	0	7	0	2	8	7	1	0	25
2A	7	9	0	3	14	10	0	2	45
2B	1	10	0	2	10	8	0	4	35
2C	0	4	0	0	5	3	0	2	14
3A	0	6	0	0	7	6	0	0	19
3B	0	0	0	0	1	3	0	1	5
3C	0	5	0	1	5	5	1	4	21
3D	0	2	0	2	2	2	0	0	8
3E	0	0	0	0	0	3	0	0	3
Total	9	70	0	18	82	64	4	21	268
Total (%)	3%	26%	0%	7%	31%	24%	1%	8%	100%

Current Uses of Sites

Sites can be characterized by current uses as well as past uses. For example, one hundred and fifty years ago Paiute and Western Shoshone people used the oases near Beatty and Ash Meadows as full-time residences that involved maintaining an elaborate system of subsistence, including irrigated farming, local hunting, seed gathering, trade, and conducting ceremonies. Indian people were forced from these desert oases and subsequently denied access to much of their traditional use areas. Today they have developed different uses for many of these sites, such as to help achieve cultural continuity by taking their children to sites to teach about past lifestyles.

Table 4.3 cross-tabulates the sites that were visited by the current use of sites like these by Indian people. A total of 162 uses were mentioned as being associated with current ethnic group uses of sites like this. This is 35.6% of the uses identified for past ethnic group use. Thus Indian people suggest an enormous decline, a 64.4% reduction, in the types of uses of traditional sites for their ethnic group.

The most commonly mentioned current uses by the ethnic group for sites like these were camping (38%) and gathering foods (38%), followed by hunting (31%), ceremony (8%) and trade (1%). Permanent residence and farming, of course, were not mentioned given the history and contemporary situation of Euroamerican colonization. Camping and hunting represent slightly higher mentions than for the ethnic group's past use of sites like these. But these higher percentages are produced by declines in all other categories; ceremony declined almost by half, as did trade. As mentioned, permanent residence and farming were eliminated. Clearly these tribal representatives document drastic reduction of use of traditional sites like the ones visited by their ethnic group.

The comments categorized as "other" (21% of responses) varied, but some of the more interesting responses were: (1) Indian people would go to this location to teach the youth about culture; (2) "they lived here all the time, mostly in the winter - it is a heavy house, real well put together," (3) "in grandfather's time a man isolated himself in a place like this because he had done wrong - they brought food up to him;" (4) "I don't really know what this site was used for"; (5) "this was a rabbit hunting area, using a few hunters and bows and arrows, but not large scale drives with nets;" (6) "we view rock art as part of our cultural history;" and (7) "this is a very sacred place because of the water, traditionally water was boiled and used for curing - 'Holy Water'- so when they drink it goes into the bloodstream and makes their heart pure, moisture goes into their bones --*Pikabah* is the name of the water place."

Table 4.4 cross-tabulates the sites that were visited by the current use of the site by the Indian person's family. A total of 118 uses were mentioned as being associated with family use of sites like those visited. These uses are 25.9% of the past ethnic uses and 44% of the past family uses, thus documenting a decline in uses of sites like these by the person's family.

Table 4.3. Current Ethnic Group Use of Sites

SITE	Permanent Residence	Camping	Farming	Ritual/ Ceremony	Gathering Foods	Hunting	Trade	Other	Total
1A	0	5	0	2	5	4	0	7	23
1B	0	10	0	4	14	5	0	2	35
1C	0	2	0	1	5	3	1	3	15
2A	0	10	0	1	7	7	0	2	27
2B	0	9	0	0	8	6	0	4	27
2C	0	3	0	0	2	2	0	2	9
3A	0	4	0	0	4	5	0	0	13
3B	0	0	0	0	0	1	0	0	1
3C	0	0	0	1	0	0	0	4	5
3D	0	1	0	1	0	1	0	1	4
3E	0	1	0	0	0	2	0	0	3
Total	0	45	0	10	45	36	1	25	162
Total	0%	38%	0%	8%	38%	31%	1%	21%	100%

Table 4.4. Current Personal Use of Sites

SITE	Permanent Residence	Camping	Farming	Ritual/ Ceremony	Gathering Foods	Hunting	Trade	Other	Total
1A	0	1	0	2	2	0	0	7	12
1B	0	6	0	1	11	3	0	3	24
1C	0	3	0	2	5	2	1	1	14
2A	0	7	0	2	7	3	0	2	21
2B	0	7	0	0	6	4	0	4	21
2C	0	3	0	0	0	1	0	0	4
3A	0	3	0	0	5	5	0	0	13
3B	0	0	0	0	0	1	0	0	1
3C	0	0	0	0	1	0	0	4	5
3D	0	0	0	0	0	0	0	1	1
3E	0	0	0	0	0	2	0	0	2
Total	0	30	0	7	37	21	1	22	118
Total	0%	25%	0%	6%	31%	18%	1%	19%	100%

The most commonly mentioned current family use was gathering foods (31%), followed by camping (25%), hunting (18%), ceremony (6%), and trade (1%). Gathering represented a higher percentage than it did for past ethnic group uses, because other uses declined or do not exist at all for family members.

Summary

Today, these Indian people do not physically use sites within the Pahute and Rainier Mesas study area; however, tribal representatives who participated in the site visits re-established use relationships with the sites visited. One representative received a song at one of the sites visited. All representatives prayed as individuals at the sites visited. Access to the sites during the fieldwork provided tribal people with an opportunity to "use" the sites, and so on one level the sites were in fact used. In addition, Indian people do use sites *similar to those in the study area* like was done in the past. Although overall ethnic uses of sites like these have declined 64.4%, Indian people still gather foods, hunt and camp in approximately similar proportions as they did in the past. This fact demonstrates in part why contemporary Indians place such high value on and express great concern for plants. Practicing ceremonies on sites like these has

Table 4.5. Gender of Site Users—Past and Present

SITE	Past User Gender (n=144)			Present Use Gender (n=72)		
	Men only	Women only	Both	Men only	Women only	Both
1A	0	1	22	0	0	11
1B	1	0	24	0	0	14
1C	0	0	11	0	0	6
2A	1	0	23	1	0	10
2B	0	0	22	1	0	10
2C	2	0	6	0	0	3
3A	0	0	8	0	0	5
3B	2	0	1	0	0	1
3C	0	1	8	0	0	6
3D	0	0	7	0	0	1
3E	3	0	1	1	0	2
Total	9	2	133	3	0	69
Total	6.2%	1.4%	92.4%	4.2%	0	95.8%

Despite the opinions represented by these few responses, the overwhelming majority of sites are perceived to have been used by both men and women as family or village use areas.

Today, fewer Indian people use sites similar to those visited, but a slightly larger percentage of responses (95.8%) suggests that sites like these are used today by both men and women. Men constituted 4.2% of responses as currently using sites exclusively. These sites were 2A, 3B, and 3E. There is no apparent reason why only men would have exclusive use of 2A, but the other two sites are uniformly perceived as hunting sites. No sites are perceived as being exclusively used by women today.

Summary

In general, these responses suggest that the Pahute and Rainier Mesas study area contains places that were used by whole groups of Indian people including men, women, and their children. These data suggest that in the past Indian people lived for long periods of time in the study area as part of their normal way of life. Despite changes in lifestyles and greatly reduced access to sites like these, today the majority of Indian people visit sites like these as families. Indeed, they used the sites visited in spiritual ways when provided the opportunity to visit them.

How Sites Are Interconnected

Indian people often view the world as an interconnected whole, created at one time with one generally understood set of relationships between its components. Within their own traditional lands, Indian people established certain patterns by which the land and its resources were utilized. There are places within and near the Pahute and Rainier Mesas study area where Indian people lived, farmed, hunted, gathered plants, and conducted ceremonies. These places were interconnected among themselves and with locations elsewhere. The meaning and importance of a place depended in part on its relationship to other places, as well as on the resources provided.

Before Europeans arrived, these Indian people created an intricate web of relationships between places having special resources and people in other areas having access to different but nonetheless equally special resources. Seasonal movement or *transhumant movements* (Stoffle and Evans 1976) within the territory of a local group of Indian people produced subsistence foods and materials for the local people and a surplus that formed the basis of trading relationships with others. These wide-ranging networks of trading relationships ultimately involved all Indian people in the region and extended to distant neighbors.

Indian people often interpret archaeological sites in terms of what has been described as an *occupational complex model* (Stoffle, Dobyns, Evans, and Stewart 1984:206-211). This model is discussed elsewhere (Stoffle, Halmo, Olmsted and Evans 1990) but it suggests that the reason why a place was selected as a use site, how the site was used, how often it was used, and ultimately the meaning and significance of the location was a function of its place in the network of trading and transhumant use relationships. For these reasons, and because Indian people typically evaluate locations in broader terms, each Indian person was asked if the site was connected with other sites in the area and, if so, what kinds of sites, and how would they be connected.

Table 4.6 lists the sites visited by (1) whether the Indian person perceived a site to be connected with other sites in the area, (2) with what kinds of other sites it is perceived to be associated, and (3) with how it is perceived to be connected to these other sites.

This table is rich with information about the interrelationships between sites. Of the 157 responses to this question, the great majority (95.5%) of Indian people thought there were interconnections between the site or sites like it and other sites. Slightly over four percent felt they had insufficient information to respond to the question, and 1.3% said that the site or sites like it were not connected with other sites. Indian people were permitted to either answer the question referring to the site being visited or sites like it. Of the 148 "yes" responses, 72.3% referred to the site being visited and 33.7% referred to similar sites located elsewhere.

Sites were perceived as being interconnected according to different purposes. In the fall of the year, for example, a high elevation site where pine nuts grow would be used during the

Table 4.6. Site Interconnectedness

Site	Connected to What Kind of Sites?	How Are These Sites Connected?
1A	Camped where there is springs. For food and basket materials. Needed willow for baskets. People traveled from one area to another. Visited a lot. Other living areas. Played hand game a lot. Her grandfather was a Shoshone. Camped where there is springs. For food and basket materials. Needed willow for baskets. 26. Are there other caves around here with things like this? I just don't think this is a campsite or storage. Other storage areas for other families other caves Would go to other place to do thing--hunting camp. Go out to visit people and return.--Visit other camp. Go pick pine nuts in fall. 26. this site 27. Warehouse-as they moved back and forth between major campgrounds they would leave things here. Think this cave was for one family. water—spring is nearby. Doves are indicator of water. -- more permanent living areas. --Spring Other stopovers along a travel route other living sites and gathering sites other living sites - Really interested in the spiritually significant songs - Salt song may have locations in this area Living sites. The person(s) buried here will be related to folks living nearby. other hunting & camping & gathering sites-to other places where there is water. to living sites, hunting sites	 Probably used in the same season each family probably had their own shelters but all were connected as a tribe valley with sun to back -- would be a planned trip; likely trail. would be hard to see because of loose rock. -- (100 years old, 120) Some for burials. Shelter for others. -- There would be marked and markings. No trails--too rocky. Water is nearby. Plants and animals used this place seasonally. This is a shelter spot. Would have gathered food and come back here. Trails would have connected this place to other places. To me this is a meeting point among all the peoples-the NV people, the CA, Arizona & Utah-they came here to trade-I was told that's what this whole area was. They traded songs, paint, salt-everything, baskets-I'm sure we traded buckskin. used by the same family

Table 4.6 continued

Site	Connected to What Kind of Sites?	How Are These Sites Connected?
	26. this site 27. Special gathering places-different types of gathering sites. Tippipah in the spring-is a source of water. Hunting site-be there and would come here. Any other place where there is water. Travel between sites. Water rare. spring sites—places where there is water; hunting sites 40-mile wash site, then back in here. Sites in Shoshoni Mt. site. If get lost on Pine Nuts. Other spring sites. Migration sites with animals, other places to gather seeds. Traveler would come through and eat from there.	This is shelter when men were hunting and women were gathering. Something happened to the family-might have been killed. Just left basketry here with intention of returning. No burial because the artifacts are exposed. Arrow would have been buried with the husband. Wife would have passed on the baskets to children, so she was stopped from coming back. people came from other places to this cave site and then went back to those other sites Same as Tippipah Spring: Used all the sites around it.
1B	Other living sites. Other living areas	They don't stay in one place during pine nut harvesting. Traveled up here from other living locations

Table 4.6 continued

Site	Connected to What Kind of Sites?	How Are These Sites Connected?
	Other living areas Need more time to look around. Not enough time to see everything in the area.	This could be a base camp they used to resupply other sites.
	other living sites hunting areas Water sites, where people lived 26. this site 27. All connected-used at same time by all the Indian people up here. hunting areas Yucca Mt. Structure there. Caves--shelter and storage. Big Pine Nut camp, where lots of people gathered. Maybe down in the valley. Everybody have five day dance. [See notes from before.] Big time... (term not used) Chief would be there. Indian way ceremony. Pine nut Dance. [Du ya neka, Duwa' nika)	this was probably seasonal-when it was hot in the lower areas-they came and stayed up here used by same families the same families probably used a hunting area here and a pine nut area over there. Yucca Mt. White Rock Spring.
1C	There might be other homesites/camping areas around here. Pine nut gathering sites Other hunting and camping areas, visiting family water camps--permanent 26. this site 27. Go to Kawich Valley, White Rock Spring Similar camps. Top of mesa here so will be connected to low range sites and midrange site. Move back and forth. Came up Aqueduct Canyon to get here. to the rock shelters, other hunting sites, water sites hunting sites; other pine nut areas definitely. All other gathering sites. Water holes. Other hunting/pine nut camp. Seasonal/temporary.	Same people probably used these different areas. Also people went to other areas to visit other people. people traveled to these other areas move back and forth Seasonal movements back and forth between sites part of a cluster of living sites people who live here probably went to other areas too People would move back and forth. Meet with different people. Lots of trade. Signs of trade. Could have 500 people at this site. One whole clan in this area. People could deal with ecosystem. Another extension of tribal groups coming to this area.
2A	Other living places Other living sites--camping areas	Artifacts are the same. Pottery means people were here for an extended period. Lone Pine people used to visit people in places like this. Stay two or three days.

Table 4.6 continued

Site	Connected to What Kind of Sites?	How Are These Sites Connected?
	Other living areas	If there were Indians in the area, there had to be a sweatlodge. Men would have gone into the creek after they got out of the sweatlodge.
	living sites	came here for healing purposes
	Place with water	Transition between lower and upper elevation sites, other camps.
	Permanent residences distant to this spot	There would have been a trail to here; people would know where this spot was.
	to the second site yesterday and other not yet discovered villages to north and south-Pahrump & Moapa	used for stop over or trade and social gathering-ritual and ceremonies by trails
	Second site visited yesterday people would come from the north	follow migratory route of deer and other animals
	3-5 people at most would stay a month or less	
	Similar sites on the mesa	wood was similar
	Other living sites on the mesa	camping spot
	Other living areas and pine nut camps.	Around here there might be other places.
	Other living sites, gathering sites	part of seasonal living sites—they had to live somewhere else in the winter.
	summer and winter camps	save people traveled to their different camps during the changing seasons
	Temporary. Moving back to homes far away. Back to their farms in Beatty or Ash Meadows.	
	Such as cave site and other camps near water. Kind of like going to stone (?). Local game would	
	Other living sites —summer camps; rabbit hunting areas	could be the same people that used other sites we've seen
	other similar camps where other families lives. Visit back and forth. might have had a family move back and forth.	If same family they would move back and forth. Like White when big doing like Pine Nut Festival. In Yomba area used to go to Smoke Valley for festivals.
	Other little homes in area. These would be neighbor-some type of camps.	Ammonia tank-would go to ceremonies there. His friend, Harry Stroze, said he use to come up to
	Moon house for any women-all stay five days. It would be near by. Smaller home.	Ammonia tank on the way to White Rock Springs. He use to run cows up here and hunt deer. Good shape about 60 years old. He talks about a trade route trail that runs through area 12.
2B		The water tanks were a reason for people to come here
	Other living sites	Connected through our people and everything that's here.

Table 4.6 continued

Site	Connected to What Kind of Sites?	How Are These Sites Connected?
	seed gathering, hunting, pinenut areas	living here in this spot they would travel to other areas for food
	The sweathhouse we saw on the first site.	If people needed healing they could have gone over there.
	Paiutes would have kept this site to themselves -- Would have come through Lamb's Canyon -- Came from NW or SW	Lamb's Canyon served as a travel route to this spot
	high grounds-can see whose coming -- boundary protection -- people would come here from the north	connected to second site visited yesterday, signal fires -- follow trails-maybe Lamb's Canyon, followed wash up or mountain/mesa tops-would be marked off
	Other living places	
	Other living sites	All in the same area. Would have visited other people and locations.
		Centralized water trough. More than likely had water in it.
	Other living sites in this area	connected by trails to other areas they used -- like hunting and gathering
	Other camping and gathering areas	same families went to the areas
	Similar to Tippipah Spring Cave -- storage and shelter. People move back and forth between them.	
	on top of mesas. Observe other activity	
	living sites, other gathering site	they probably came here to make pottery -- so many fires here, and make points and tools, scrapers
	Pine nut camp—not such a big area in them days.	Return to here after gathering pine nuts.
	White Rock—	Go to White Rock for ceremonies, trade.
	Other pine nut camps. Summer time hang	Other [something impossible to read]
2C	Other pine nut areas	If pine nuts aren't ready here, they go to a different spot.
	rock shelters	I think everything is connected—one site to another.
	with the second site visited today-would have moved from shelter to hunt here	trail maybe
	lowlands	travel route
		part of traditional trail
	living sites nearby	
	Move permanent camping sites like ones we have seen	Live there come here. Hunters need to carry water. Water would have been part of the decision.
	living and hunting sites	on a trail between sites
3A	Other camp sites	Camp sites are all over for pinion pine nuts. Some

Table 4.6 continued

Site	Connected to What Kind of Sites?	How Are These Sites Connected?
	Other living areas	They stopped at each place for one reason or another. Usually traveled between spots.
	A main camp somewhere	People would come here to hunt and get pine nuts. And to visit
	Ceremonial areas. This might be a little more activity in it	All plants and all wildlife are connected.

Table 4.6 continued

Site	Connected to What Kind of Sites?	How Are These Sites Connected?
	The Tongue Wash Poh and the other ones around here	trail
	The tinaja stop	They lived here and they got their water from someplace else.
	26. this site	used as part of same ceremony
	27. The rock/water/petroglyph site	
3E	Other food and hunting places, living area.	This site has things they value, but doesn't have everything
	living areas	Fairly low. Use it as a stopover place when people travel.
	Living areas	Moved from place to place, followed the hunting cycle

harvest season. While at the pine nut camp, however, the men would go to hunt and perhaps make a hunting camp at some other location. After the harvest, people would move to a lower elevation, where meat and pine nuts could be processed and stored. During the coldest months of the year, most families would move to oasis settlements at Ash Meadows and Beatty.

Summary

Some sites were perceived as having regional interconnections because they were being visited and used by Indian people who primarily resided outside of the area. Some of these sites were along regular travel routes, like the trail from the south to the north that passed through Forty-Mile Canyon. Other places were used because they were places out of the way from normally used areas, such as a place reserved for burials or spiritual activities. Other areas, such as White Rock spring, were central to many places where people lived, so it was regionally important for trading and social celebrations. In general, these comments reflect the holistic perspective of the occupational complex model described above.

Cultural Transmission

One informative way of looking at cultural knowledge is by studying the ways it is transmitted. Ultimately, cultural knowledge must be transmitted from generation to generation so that it persists. From the perspective of Western culture, when knowledge is not passed on, it is lost. A variety of factors can influence cultural learning. One of these is access to the areas and things being taught about. Indian people rarely use the term "teach" to describe cultural learning. Instead, they talk about "showing" children or others. The most common means of showing is to go to a place and do an activity at that place. Showing "how to do" is bound up with "showing when to do" and showing "where to do." Thus, children would be taken in the fall of the year to a place where the seeds of a certain plant were ripe and shown by an elder how to gather and process those seeds. The how, when, and where of the activity would become part of the same lesson. Lack of access is one of the most commonly mentioned factors that restricts cultural learning. Without access to places, certain lessons are normally not taught.

Even though knowledge is lost to one generation of Indian people, it can be recovered, though perhaps altered or transformed, by a later generation. *Cultural revitalization* is a term that describes one way that lost cultural knowledge is rediscovered and reintegrated into a living society. Lost knowledge can be acquired in various ways in various societies, but a common means is by a powerful religious person having a vision. Wovoka, a Northern Paiute religious leader, had the vision that began the Ghost Dance movement. Lost knowledge also comes back to Southern Paiute people, for example, because they believe that a person who has prepared themselves properly can *talk to* rocks, water, mountains, and plants. During these conversations, these natural resources convey knowledge about themselves to the members of the living society.

Table 4.7 cross-tabulates the sites that were visited by persons who taught the Indian person about either the site visited or similar sites. Twenty-seven percent of the responses mention the mother as the person who taught the respondent. "Other relatives" were named and comprised 19% of the responses. These other relatives are commonly aunts and uncles. Grandmother and father each comprised 15% of the responses. Grandfather was named in 10% of the responses. Clearly, then, the tribal representatives learned about traditional sites and activities from immediate family members and/or extended family relatives.

Table 4.8 cross-tabulates the sites that were visited by people who the Indian person is teaching or will teach about either this site or similar sites. The Indian people who responded to this question are overwhelmingly teaching or intend to teach their own children. Children constituted 57% of all responses, followed by grandchildren (26%), other relatives which commonly mean nieces, nephews, and cousins (10%), and non-related friends and neighbors (8%). When children and grandchildren are combined, these two categories comprise 83% of all existing and intended teaching. In other words, teaching will be directed toward the person's own children or grandchildren. The message clearly seems to be that teaching about traditional places and their uses belongs in the home of the Indian person who knows about them.

Other Indian people are taught about the uses of sites visited or sites like these in similar proportions to the number of perceived uses for these sites. (NOTE: This is probably a function of the number of people who visited the site).

Cultural Significance

The question of cultural significance can be asked about any aspect of culture for any society. It seems, however, that the desire to define degrees of significance is more in keeping with Western philosophy, which tends to separate the developed from the undeveloped, the sacred from the profane, in the process of choosing between behavior alternatives that result in the least negative impacts to culture. According to this philosophy, it is better to develop less significant natural and cultural landscapes, so that other landscapes can be protected. This study is conducted within a body of law and regulation that reflects this philosophy.

Table 4.7. Person From Whom Respondent Learned About Sites

SITE	Mother	Father	Grandmother	Grandfather	Other Relative	Friend/ Neighbor/ Other Person	Don't Remember/ No Response	Total
1A	8	4	9	9	2	5	2	39
1B	12	8	5	4	13	4	1	47
1C	7	0	4	2	8	1	1	23
2A	14	8	8	4	10	4	1	49
2B	12	5	6	5	8	4	4	44
2C	6	5	2	2	2	2	2	21
3A	6	3	4	1	5	1	0	20
3B	3	2	1	0	1	0	2	9
3C	3	3	1	1	3	3	0	14
3D	3	3	1	1	1	2	0	11
3E	2	0	0	0	1	0	1	4
Total	76	41	41	29	54	26	14	281
Percent	27%	15%	15%	10%	19%	9%	5%	100%

Table 4.8. Person Whom Respondent is Currently Teaching About Sites

SITE	Children	Grandchildren	Other Relatives	Friends & Neighbors	Total
1A	12	4	1	1	18
1B	10	6	3	2	21
1C	7	3	1	1	12

It is possible for Indian people to assign degrees of cultural significance to traditional cultural resources. When they do so, they tend to preface their remarks with statements like, "In our culture all things are perceived as equal." But they understand that in the dominant culture all things are not perceived as equal. Therefore Indian people must define their cultural resources in Western terms so that priorities for protecting cultural resources can be set by the Indian people themselves (Stoffle and Evans 1990).

There is a growing professional literature regarding how to calculate cultural significance (Halmo, Stoffle, and Evans 1993; Stoffle, Halmo, Evans, Olmsted 1990). Much of this literature has focussed on plants, inasmuch as American Indian plants are a subject of great world debates. Other cultural resources and the cultures of other people are now entering these discussions.

The current ethnoarchaeology study builds on past work with Indian peoples in order to develop a means of assessing the cultural significance of the archaeology sites in the Pahute and Rainier Mesas study area. The study especially uses efforts at translating plant concerns into geographic areas so these then can be protected. Archaeology sites, like plants, can be assigned an overall evaluation score by Indian people. Unfortunately, unless all sites in a study area can be visited, it is difficult to move from the evaluation of visited sites to an evaluation of the sites not visited.

Archaeology sites, like plants, can be viewed as having component parts. The parts of archaeology sites are called *features*. When Indian people are asked what they perceive to be the features of an archaeology site that contribute to its evaluation, these features can help define categories of archaeology sites. Unlike overall evaluations, the feature-by-feature evaluations can lead to a model of Native American site interpretation and evaluation that then can help evaluate sites not visited.

Table 4.9 cross-tabulates the features Indian people perceived were used at each site by the cultural significance of each feature present for each of the sites visited. At each site they visited, the Indian people were asked to assess whether or not each of a list of twenty-two features were present. The features are ones commonly mentioned in past ethnoarchaeology studies as being components of archaeology sites. Most features can be understood without explanation, such as rockshelter, trail, or plants. Other features required minor explanation; for example a lithic scatter refers to chips of stone from artifact production, or petroglyphs refers to symbols chipped into natural stone. Two features (location and view/aesthetics) were especially difficult to understand, but past studies suggested the need to at least ask the questions. Location was designed to get at the extent that geographical location was part of the reason a site was established. For example, winter camps were often placed on a south-facing slope to catch the early morning sun. View and aesthetics get at whether or not the people who selected a place for some activity found the aesthetics sufficiently pleasing so one place was chosen over an otherwise equally useful place. In general, Indian people found the concepts increasingly easy to understand as they evaluated more archaeology sites.

Table 4.9. Features Used At Sites Visited

Features used

Feature	No	Yes	Low	Med	High
Location	2	23	1	0	22
View/Aesthetics	5	20	0	1	19
Water/Spring	3	22	2	1	19
Tinajas/Tanks	23	1	0	0	0
Plants	4	21	0	7	14
Animals	5	20	0	5	15
Natural Raw Materials	22	3	0	1	2
Minerals	25	0	0	0	0
Burials	10	15	0	0	15
Stone Structures	25	0	0	0	0
Wood Structures	25	0	0	0	0
Hearth/Firepit	19	6	1	0	4
Rockshelter	4	21	1	2	18
Rock Rings	25	0	0	0	0
Stone Artifacts	19	6	0	0	6
Groundstone	22	3	0	0	3
Fiber Artifacts	0	25	0	0	25
Wooden Artifacts	1	24	0	1	24
Trail	17	8	1	3	4
Petroglyphs	25	0	0	0	0
Ceramics	5	20	0	4	15
Lithic Scatter	15	10	2	2	6
Other	18	7	2	1	4

Photo 4.1. Photo not provided due to sensitivity of site.

Table 4.9. Features Used At Sites Visited (continued)

Features used at

Feature	No	Yes	Low	Med	High
Location	3	21	0	1	20
View/Aesthetics	14	11	0	3	8
Water/Spring	22	3	0	1	2
Tinajas/Tanks	25	0	0	0	0
Plants	4	21	0	0	21
Animals	7	18	1	1	15
Natural Raw Materials	25	0	0	0	0
Minerals	25	0	0	0	0
Burials	22	4	0	1	2
Stone Structures	20	5	0	2	3
Wood Structures	4	21	0	3	18
Hearth/Firepit	20	5	0	2	3
Rockshelter	25	0	0	0	0
Rock Rings	4	21	1	2	18
Stone Artifacts	12	13	1	2	10
Groundstone	21	4	0	1	3
Fiber Artifacts	25	0	0	0	0
Wooden Artifacts	25	0	0	0	0
Trail	25	0	0	0	0
Petroglyphs	25	0	0	0	0
Ceramics	20	5	0	1	4
Lithic Scatter	2	23	0	4	19
Other	12	12	2	1	8

Photo 4.2. Fallen wooden structure

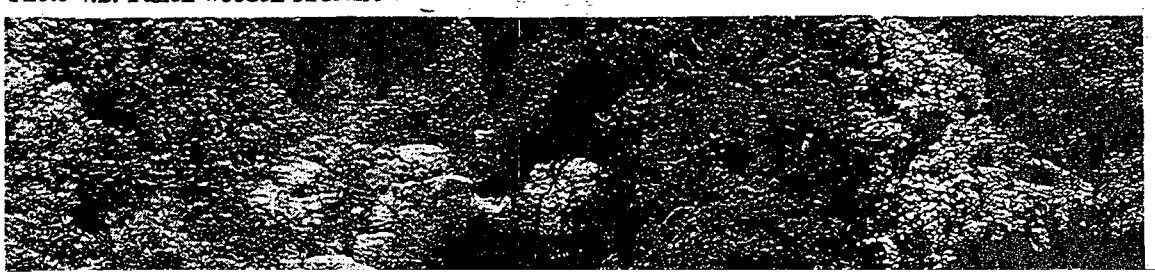


Table 4.9. Features Used At Sites Visited (continued)

Features used

Feature	No	Yes	Low	Med	High
Location	1	10	0	0	10
View/Aesthetics	2	9	0	0	9
Water/Spring	2	10	3	0	7
Tinajas/Tanks	4	7	0	0	7
Plants	0	11	0	0	11
Animals	2	9	0	0	9
Natural Raw Materials	8	3	0	0	3
Minerals	11	0	0	0	0
Burials	4	7	0	0	7
Stone Structures	6	5	0	0	5
Wood Structures	9	2	0	0	2
Hearth/Firepit	4	7	0	0	7
Rockshelter	2	9	0	0	9
Rock Rings	0	11	0	0	10
Stone Artifacts	0	11	0	0	11
Groundstone	0	11	0	0	11
Fiber Artifacts	11	0	0	0	0
Wooden Artifacts	11	0	0	0	0
Trail	9	2	0	0	2
Petroglyphs	11	0	0	0	0
Ceramics	4	7	0	0	7

Table 4.9. Features Used At Sites Visited (continued)

Features used at

Feature	No	Yes	Low	Med	High
Location	4	20	1	2	17
View/Aesthetics	15	9	0	2	7
Water/Spring	10	14	1	1	12
Tinajas/Tanks	22	0	0	0	0
Plants	2	22	0	0	22
Animals	5	19	1	2	16
Natural Raw Materials	22	2	0	0	2
Minerals	24	0	0	0	0
Burials	21	2	0	0	1
Stone Structures	24	0	0	0	0
Wood Structures	1	24	0	1	23
Hearth/Firepit	16	8	0	2	6
Rockshelter	24	0	0	0	0
Rock Rings	21	3	0	0	3
Stone Artifacts	15	9	0	0	9
Groundstone	10	15	0	0	12
Fiber Artifacts	24	0	0	0	0
Wooden Artifacts	24	0	0	0	0
Trail	22	2	0	0	2
Petroglyphs	24	0	0	0	0
Ceramics	18	6	1	0	5
Lithic Scatter	1	24	0	4	22
Other	23	0	0	0	0

Photo 4.4. Fallen conical lodge at

Table 4.9. Features Used At Sites Visited (continued)

Features used :

Feature	No	Yes	Low	Med	High
Location	5	20	0	0	20
View/Aesthetics	5	20	0	1	19
Water/Spring	24	1	0	0	1
Tinajas/Tanks	3	22	0	1	21
Plants	3	22	0	2	20
Animals	9	17	1	2	13
Natural Raw Materials	20	5	0	0	5
Minerals	25	0	0	0	0
Burials	19	8	1	0	5
Stone Structures	21	4	0	0	4
Wood Structures	25	0	0	0	0
Hearth/Firepit	16	9	0	1	8
Rockshelter	0	25	0	0	25
Rock Rings	22	3	0	0	3
Stone Artifacts	3	22	0	0	22
Groundstone	2	23	0	1	22
Fiber Artifacts	25	1	0	0	1
Wooden Artifacts	25	0	0	0	0
Trail	20	5	0	0	5
Petroglyphs	25	0	0	0	0
Ceramics	2	23	0	1	22
Lithic Scatter	0	25	0	2	23
Other	25	0	0	0	0

Photo 4.5. Boulder rockshelter at

Table 4.9. Features Used At Sites Visited (continued)

Features used at

Feature	No	Yes	Low	Med	High
Location	3	5	0	1	4
View/Aesthetics	2	6	0	0	6
Water/Spring	8	0	0	0	0
Tinajas/Tanks	8	0	0	0	0
Plants	1	9	1	2	6
Animals	5	3	1	0	2
Natural Raw Materials	5	3	0	1	2
Minerals	8	0	0	0	0
Burials	7	1	0	0	1
Stone Structures	0	0	0	0	0
Wood Structures	8	0	0	0	0
Hearth/Firepit	8	0	0	0	0
Rockshelter	8	0	0	0	0
Rock Rings	8	0	0	0	0
Stone Artifacts	5	2	0	1	1
Groundstone	6	0	0	0	0
Fiber Artifacts	8	0	0	0	0
Wooden Artifacts	8	0	0	0	0
Trail	7	1	1	0	0
Petroglyphs	8	0	0	0	0
Ceramics	8	0	0	0	0
Lithic Scatter	0	9	3	3	3
Other	8	0	0	0	0

Photo 4.6. Overview o

Table 4.9. Features Used At Sites Visited (continued)

Features used

Feature	No	Yes	Low	Med	High
Location	2	6	0	1	5
View/Aesthetics	4	4	0	0	4
Water/Spring	7	1	0	0	1
Tinajas/Tanks	8	0	0	0	0
Plants	0	8	0	2	6
Animals	2	6	0	0	6
Natural Raw Materials	7	1	0	0	1
Minerals	7	0	0	0	0
Burials	6	3	0	1	2
Stone Structures	7	1	0	0	1
Wood Structures	0	8	0	0	8
Hearth/Firepit	8	0	0	0	0
Rockshelter	8	0	0	0	0
Rock Rings	0	8	0	1	7
Stone Artifacts	6	2	0	1	1
Groundstone	3	5	0	0	5
Fiber Artifacts	8	0	0	0	0
Wooden Artifacts	8	0	0	0	0
Trail	7	1	0	1	0
Petroglyphs	8	0	0	0	0
Ceramics	6	2	0	0	2
Lithic Scatter	0	8	0	3	5
Other	8	0	0	0	0

Photo 4.7. Fallen wooden structure at

Table 4.9. Features Used At Sites Visited (continued)

Features used

Feature	No	Yes	Low	Med	High
Location	4	1	0	0	1
View/Aesthetics	3	2	0	0	2
Water/Spring	5	0	0	0	0
Tinajas/Tanks	5	0	0	0	0
Plants	3	2	0	0	2
Animals	2	3	0	0	3
Natural Raw Materials	5	0	0	0	0
Minerals	5	0	0	0	0
Burials	5	0	0	0	0
Stone Structures	5	0	0	0	0
Wood Structures	5	0	0	0	0
Hearth/Firepit	5	0	0	0	0
Rockshelter	5	0	0	0	0
Rock Rings	5	0	0	0	0
Stone Artifacts	3	2	0	1	1
Groundstone	2	3	0	1	2
Fiber Artifacts	5	0	0	0	0
Wooden Artifacts	5	0	0	0	0
Trail	5	0	0	0	0
Petroglyphs	5	0	0	0	0
Ceramics	5	0	0	0	0
Lithic Scatter	0	5	0	2	3
Other	5	0	0	0	0

Photo 4.8.

Table 4.9. Features Used At Sites Visited (continued)

Features used a

Feature	No	Yes	Low	Med	High
Location	1	7	0	0	7
View/Aesthetics	1	7	0	0	7
Water/Spring	1	6	0	0	6
Tinajas/Tanks	1	7	0	0	7
Plants	1	7	0	1	6
Animals	1	7	0	0	7
Natural Raw Materials	7	1	0	0	1
Minerals	7	1	0	0	1
Burials	7	1	0	1	0
Stone Structures	7	1	0	0	1
Wood Structures	8	0	0	0	0
Hearth/Firepit	7	1	0	0	1
Rockshelter	2	6	0	0	6
Rock Rings	7	1	0	0	1
Stone Artifacts	6	2	0	0	2
Groundstone	7	1	0	0	1
Fiber Artifacts	8	0	0	0	0
Wooden Artifacts	8	0	0	0	0
Trail	3	5	0	1	4
Petroglyphs	1	7	0	0	7
Ceramics	7	1	0	0	1
Lithic Scatter	7	1	0	0	1
Other	7	0	0	0	0

Photo 4.9. Overview of

Table 4.9. Features Used At Sites Visited (continued)

Features used at

Feature	No	Yes	Low	Med	High
Location	0	7	0	0	7
View/Aesthetics	1	6	0	0	6
Water/Spring	6	1	0	1	0
Tinajas/Tanks	6	1	0	0	1
Plants	3	4	0	0	4
Animals	1	6	0	0	6
Natural Raw Materials	6	1	0	0	1
Minerals	7	0	0	0	0
Burials	6	1	1	0	0
Stone Structures	7	0	0	0	0
Wood Structures	7	0	0	0	0
Hearth/Firepit	5	2	0	0	2
Rockshelter	0	7	0	0	7
Rock Rings	7	0	0	0	0
Stone Artifacts	7	0	0	0	0
Groundstone	4	3	0	0	3
Fiber Artifacts	7	0	0	0	0
Wooden Artifacts	5	2	0	0	2
Trail	3	4	0	0	4
Petroglyphs	1	6	1	0	5
Ceramics	6	1	0	0	1
Lithic Scatter	1	6	0	0	6
Other	4	3	0	0	3

Photo 4.10. Overview of ridge near

Table 4.9. Features Used At Sites Visited (continued)

Features used at

Feature	No	Yes	Low	Med	High
Location	0	3	0	0	3
View/Aesthetics	3	0	0	0	0
Water/Spring	3	0	0	0	0
Tinajas/Tanks	3	0	0	0	0
Plants	0	4	0	1	3
Animals	0	3	0	1	2
Natural Raw Materials	3	0	0	0	0
Minerals	3	0	0	0	0
Burials	3	0	0	0	0
Stone Structures	3	0	0	0	0
Wood Structures	3	0	0	0	0
Hearth/Firepit	3	0	0	0	0
Rockshelter	3	0	0	0	0
Rock Rings	3	0	0	0	0
Stone Artifacts	0	4	0	0	4
Groundstone	3	0	0	0	0
Fiber Artifacts	3	0	0	0	0
Wooden Artifacts	3	0	0	0	0
Trail	3	0	0	0	0
Petroglyphs	3	0	0	0	0
Ceramics	3	0	0	0	0
Lithic Scatter	0	4	0	0	4
Other	3	0	0	0	0

Photo 4.11. Overview

Once a list of features that the person perceives to be present was established, the person was asked to evaluate the cultural significance of each feature to Indian people today. A three-point scale (low, medium, high) was used to evaluate the cultural significance of each feature. The

[redacted]

a feature is culturally significant today to Indian people. Differences in the cultural significance of features were generally associated with cultural background. It is expected that Indian ethnic groups will differ as to the cultural importance of features. Such differences need only be noted, unless they cause differences in mitigation recommendations. In such an instance, these issues need to be resolved during mitigation meetings.

In general, the sum of the evaluation scores for the features perceived to be present at a site is associated with the overall cultural significance of the site. The exact relationship of features significance to overall all site evaluation is not yet understood, because some features probably contribute more to the overall evaluation than other features. For example, a high significance fire pit does not contribute the same to overall site evaluation as a high significance

(4.5%), while a few were evaluated as of low significance (2.5%) to Indian people today. Indian people took seriously the responsibility of evaluating each site for its cultural significance, as is indicated by the range of responses to the question of overall significance.

Conclusion

Ethnoarchaeology is about how the people view the places and things of their ancestors. This chapter has presented a statistical perspective of how Owens Valley Paiutes, Western Shoshone, and Southern Paiute people view archaeology sites located in the Pahute and Rainier Mesa study area.

Statistical analysis is another way to find the broad story that the Indian people want to tell about these things and these places. The general pattern of what Indian people think often becomes clear with statistics, but the deeper feelings they have about these things and places must come from longer statements such as the ones provided in the previous chapter. This chapter, therefore, is another way to provide a view of the Indian story.

CHAPTER FIVE

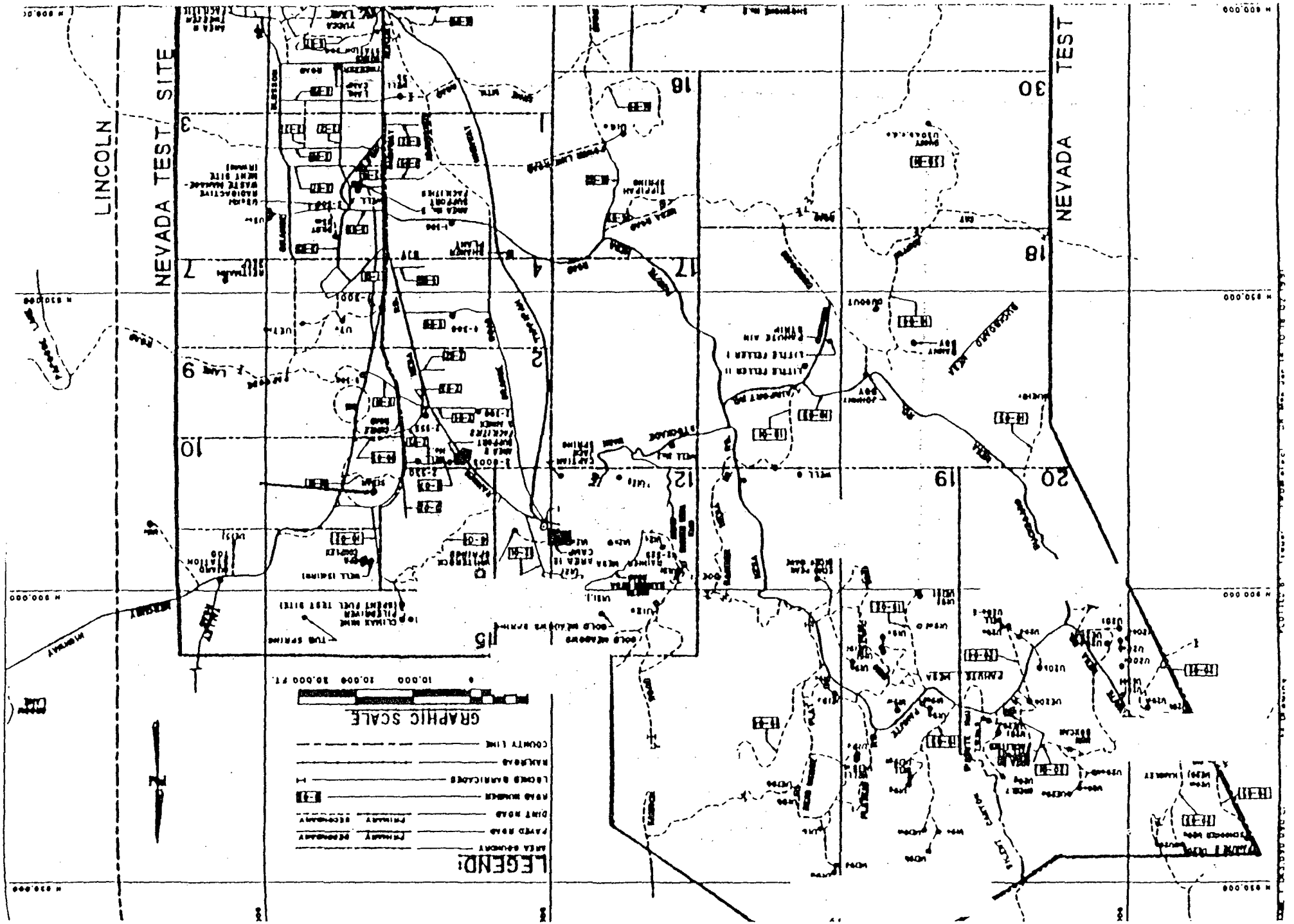
ETHNOBOTANY

The American Indian ethnobiological on-site visits to Pahute and Rainier Mesas on the NTS were conducted between June 1, 1992 and June 18, 1992. This activity was conducted as part of the NTS AIRFA compliance program to better understand how plants and animals contribute to the cultural importance of various places in the study area. *Ethnobiology* is the study of how Indian people perceive all living organisms. It includes how Indian people perceive plants (*ethnobotany*) and animals (*ethnozoology*). This chapter discusses the ethnobotanical portion of the ethnobiology study. Chapter Six discusses the findings from animal interviews conducted in the study area.

This chapter discusses: (1) where Indian people visited sites and how the sites were chosen, (2) the chronology of these visits emphasizing when various tribes visited, (3) what kinds of interviews occurred, and (4) the site-by-site findings. The chapter concludes by discussing how the perceptions of Indian people concerning plants can be translated into mitigation recommendations.

Sites Visited on Pahute and Rainier Mesas

The study design for the site visits to Pahute and Rainier Mesas took into account several factors. First, the site visits were designed to provide tribal experts with as wide a range of sites in the study area as possible. The study area was divided into three broad zones reflecting past


LINCOLN
NEVADA TEST SITE
NEVADA TEST
GRAPHIC SCALE
LEGEND:

First Day. For each of the blocks, the first day was spent visiting three sites on

[redacted]

(2) two locations a short distance apart in Gold Meadow, or sites and (see map).

Second Day. On the second day of each block, three sites in the central portion of the study area on Pahute Mesa were visited. These sites were (1)

Third Day. The third day of each block was spent visiting three sites in the western portion of the study area. These sites were on Pahute Mesa, at lower elevation than the previous sites visited on preceding days. Third day sites visited were (1) an unnamed site called C-1, (2) a small valley at the head of Thirsty Canyon, or site C-2, and (3) Grass Spring Canyon, or site C-3 (see map).

Chronology of Field Work

University of Arizona ethnographers Stoffle, Evans, and Halmo departed Tucson for Las Vegas on June 1, 1992. Upon arriving in Las Vegas, they proceeded to Mercury to prepare for the fieldwork. At Mercury, they met the Yomba representative. Throughout the day on June 2, the ethnographers, DRI archaeologist Lonnie Pippin, and the Yomba representative outlined the study design and travel itinerary for visiting a series of sites on Pahute and Rainier Mesas using

On June 6, 1992, the second block of site visits began. Over these three days, nine sites were visited with representatives of the Moapa Paiute, Lone Pine, and Yomba Shoshone tribes and the Las Vegas Indian Center. The same itinerary of site visits was followed, beginning with three sites on Rainier Mesa (June 7), three sites on Pahute Mesa (June 8), and three sites on western Pahute Mesa (June 9). Tribal representatives departed on the evening of June 9 and the morning of June 10. Experts from the Yomba and Kaibab Paiute tribes arrived that afternoon. In addition, DRI ethnographer Molly Dufort arrived to participate in the interviewing.

The third block of site visits to Pahute and Rainier Mesa sites occurred between June 11 and June 13, 1992. On June 14, Yomba and Kaibab representatives departed the NTS. Two representatives from Big Pine, two Chemehuevi experts from the Colorado River Indian Tribes (CRIT), and two experts from the Timbisha Shoshone Tribe arrived on the afternoon of June 14 to participate in the final three-day block of site visits to Pahute and Rainier Mesas.

The final block of site visits began on June 15 and ended on June 17. The same series of sites on Pahute and Rainier Mesas were visited with the tribal representatives mentioned above. During this block, the research team was escorted by DRI archaeologist and photographer Colleen Beck, who photographed Indian plants identified in the field. On June 17, the research team obtained RAMATROL clearance for removing the voucher botanical specimens from the NTS. The consulting botanist took the specimens and returned to Las Vegas. On June 18, tribal experts departed the NTS. The University of Arizona ethnographers left the NTS and traveled to Las Vegas to return to Tucson. On the same day, DRI ethnographer Dufort returned to Reno. The ethnobotanical on-site visits to the Pahute and Rainier Mesas study area were successfully completed.

Tribal Participants and Summary of Interviews

Tribes from all three American Indian ethnic groups participated in the ethnobiology study. Owens Valley Paiutes were represented by the Big Pine Paiute Tribe and Lone Pine Paiute Tribe. Western Shoshone people were represented by Yomba Shoshone Tribe and two Timbisha tribal members acting on their own behalf as interested parties. Southern Paiutes were represented by the Chemehuevi people from the Colorado River Indian Tribes, Kaibab Paiute Tribe, the Pahrump Paiute Tribe, and the Paiute Indian Tribe of Utah. In addition, the Las Vegas Indian Center sent representatives of the urban Indian population of Clark County that is otherwise not represented by one of the 17 involved tribes.

A total of twenty-two tribal experts participated in the ethnobotany on-site visits. These experts provided detailed information on (1) plants, (2) animals, and (3) places of importance to Indian people. An overall total of 303 interviews were conducted.

A total of 246 plant-specific interviews were conducted on 42 species of plants using an interview form (see Appendix B). In addition, 50 animal-specific interviews on 15 species of animals were conducted. Sacred place interviews were conducted for sites in which tribal representatives expressed a special concern. A total of seven sacred place interviews were conducted. The breakdown of interviews by ethnic groups is presented in the table below:

Table 5.1. Interview Summary

ETHNIC GROUP	INTERVIEWS			
	Plant	Animal	Place	Total
Southern Paiute	150	24	5	179
Western Shoshone	64	15	2	81
Owens Valley Paiute	29	10	0	39
Las Vegas Indian Center	3	1	0	4
Total	246	50	7	303

Table 5.2 lists the species of plants identified by tribal representatives. The table lists the botanical name and common name for each species, as well as the number of interviews that were conducted on each plant. The table also contains the Indian name for the plant when these were known by the person being interviewed.

The only previous research on American Indian plants was conducted during the YMP study (Stoffle, Evans and Halmo 1989). That study was conducted at lower elevations on the NTS, so many of the forty-two species of plants identified in this study are different species. The plants in this study are representative of upland vegetation zones. Plants typical of lower elevations and spring vegetation plant communities are not represented. Only one rare and endangered plant was identified during the Pahute and Rainier Mesas study. This plant is called *Penstemon pahutensis* (Pahute beard tongue). This report indicates where this plant was observed.

Site-by-Site Analysis

This portion of the chapter discusses the plant concerns of Indian people as these were expressed for each of the sites that were visited. The sites are discussed as they were visited and should be perceived of as representing similar ecozones found both around the site and elsewhere in the Pahute and Rainier Mesas study area. Each description begins with a botanical overview of the location. The project botanist, Patrick Leary, listed all plants he could identify at each site. His list of all observed plants represents approximately all those plants that the Indian

Table 5.2 Native American Identified Plant Species

Botanical Name	Common Name	Southern Paiute	Western Shoshone	Owens Valley Paiute	# of Interviews
Artemisia nova	black sagebrush	*sangwav,suapiv*	*bahopi*		3
Artemisia tridentata	big sagebrush	*sangwav*	*bahopi,povi*	*NR*[m]	16
Calochortus bruneaunis	sego lily	*sixo'o*	*sego*	*NR*	7
Castilleja martinii	paintbrush			*NR*	1
Ceratoides lanata	winterfat		*NR*		1
Chenopodium fremontii	Fremont goosefoot	*sax'watikap*	*u'tsihi*		5
Chrysothamnus nauseosus	rabbitbrush	*s'hamp*	*su'pimba*		11
Coryphantha vivipara var. rosea	foxtail cactus	*manav, yuav*	*NR*		4
Eleocharis palustris	spike rush	*pahrariev*	*buenohap*		6
Elymus elymoides	squirrel tail	*saxwanartosivu*			3
Ephedra nevadensis	Indian tea	*hunaap,tu'up*	*nenendi*	*tunaap*	11
Ephedra viridis	Indian tea	*hunaap, tu'up*	*nenendi*	*tunaap*	17
Erlastrum eremicum	desert eriastrum			*NR*	1
Erodium cicutarium	herringbill; storks bill	*wyavimp*			1
Euphorbia albomarginata	rattlesnake weed; spurge	*tavika'xaiv*			3
Gilia inconspicua	gilia (Phlox family)			*NR*	2
Grayia spinosa	spiny hop sage			*NR*	1
Juniperus osteosperma	juniper,cedar	*wa'ap*	*sunwavi,sawabi*	*hunavu*	15
Lewisia rediviva	bitter root		*gwigah*		1
Lichen	lichen	*timpapsuchicu*			3
Stephanomeria spinosa	spiny wire lettuce		*NR*		1
Menzelia albicaulis	white stem stickleaf; desert corsage	*tsu'u*	*tsua*	*tsua,ma'tsua*	9
Mirabilis multiflora	four o'clock	*tsoo'owaxiv*			2
Nicotiana attenuata	coyote tobacco; Indian tobacco	*tsoap*	*NR*	*NR*	9
Opuntia polyacantha	grizzly bear cactus	*saivawia*	*NR*		8
Orobanche corymbosa	broom rape; wild asparagus	*tu'u*	*tu'tsun,tu'dsi*		5
Penstemon floridus	Panamint beard tongue			*NR*	1
Penstemon pahutensis	Pahute beard tongue	*NR*		*NR*	2
Pinus monophylla	pinon pine	*tavap,tu'uv*	*wahpi*	*tuva*	16
Purshia mexicana	cliffrose	*kunap*	*kunavi*		4
Purshia tridentata	buckbrush	*UNAp*			6
Quercus gambelli	scrub oak; Gambel's oak	*tsav*		*tsigino,we'a*	7
Rhus aromatica	skunkbush,sumac	*i'ts,su'uv,u'up*			2
Ribes cereum	squaw currant; white squaw currant	*NR*	*bogombi*		7
Ribes velutinum	desert gooseberry	*NR*	*NR*	*NR*	6
Rosa woodsii	woods rose	*pikkuriump*	*siwa'vit,cimbi*		9
Salsola iberica	Russian thistle	*manav*			2
Strymbrium altissimum	tumbling mustard	*wa'ai*			1
Sphaeralcea ambigua	globe mallow	*tapwiv*			4
Stanleya pinnata	Indian spinach, prince's plume	*tamar*	*tu'mara*	NR	10
Stipa hymenoides	Indian ricegrass	*wa'ai*	*wai*	*pacita*	13
Yucca baccata	banana yucca	*tsaiv*	*NR*		10

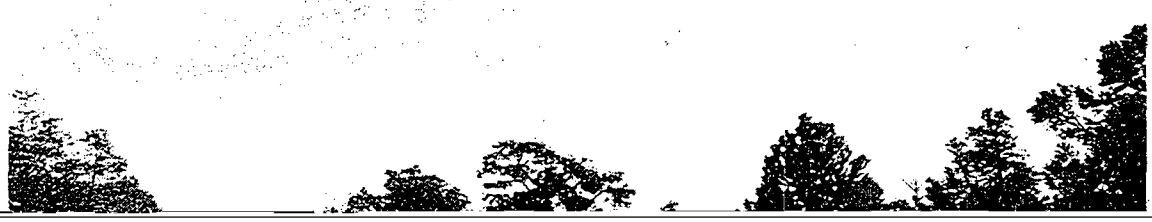
people had to choose from for commentary. Certainly, it is possible that other plants were present but were not observed, either because they were not seen by the botanist or because the plant grows in another season.

Vegetation and Flora of Pahute and Rainier Mesa

The vegetation of the Pahute and Rainier Mesas region of the NTS falls into the Great Basin Desert vegetative association. Beatley (1976:52) describes the area in the following general terms.

Most of the region is above 5000 ft in elevation; except for the Forty-Mile

Photo 5.1. Upland Vegetation at



*Pinus monophylla**
Poa fendleriana
*Purshia tridentata**
*Quercus gambellii**
*Ribes velutinum**
*Salsola iberica**
Senecio multilobatus
*Sphaeralcea ambigua**
Stephanomeria spinosa
Stipa comata
*Stipa hymenoides**
Stipa pinetorum
Streptanthus cordatus
Tetradymia canescens

Tribal representatives identified 17 (31%) of the 55 plants observed at site A1.

The Gold Meadows area that was visited is comprised of two sites situated at 2,050 m. The topography of this site is essentially flat. Residual soils are deep and often quite sandy. A stock pond is present in the study area. The pond receives regular, heavy visitation from horses and deer. Soils in the area of the pond are mostly derived from coarse grained granites. This disturbed area around the stock pond supports many adventive species. Plants observed around the stock pond include: *Chrysothamnus nauseosus**, *Bromus tectorum*, *Descurainia pinnata*, *Munroa squarrosa*, *Gnaphallium palustra*, *Chrysothamnus viscidiflorus*, *Amaranthus retroflexus*, *Lappula occidentalis*, *Mimetanthe pilosa*, and *Polygonum douglasii*.

The meadow areas with well developed soils are dominated by *Artemisia tridentata** and *Stipa comata*. Where bedrock is at or near the ground surface of the meadow, the dominant species tend to be *Artemisia nova**, *Chrysothamnus viscidiflorus*, *Tetradymia canescens*, *Bouteloua gracilis*, *Arenaria congesta*, *Eriogonum caespitosum*, and *Elymus elymoides**.

The slopes that bound the meadow and study area to the northeast have exposed bedrock and shallow residual soils. Weathered granite boulders make up one ridge while the largest hill to the east is igneous extrusive rock. The slope areas support a piñón-juniper-*Artemisia* woodland. Major plant species of these slopes include *Pinus monophylla*, *Juniperus osteosperma*, *Haplopappus nanus*, *Purshia tridentata**, *Bouteloua gracilis*, *Opuntia polycantha**, *Elymus elymoides**, *Artemisia tridentata**, and *Yucca baccata**.

A small valley ca. 300 meters east of the stock pond supports an extensive population of the endemic *Trifolium andersonii beatleyii*. Two specimens of *Coryphantha vivipara rosea** were also noted in the same area.

There are occasional igneous extrusive rock outcrops of bedrock in Gold Meadow. Study site A-3 is located on one of these "islands" and encompasses an area of ca. 1,000 square

meters. Vegetation is typical of the slopes that surround the meadow, dominated by shrubby and arborescent species. *Penstemon pahutensis* (Pahute beard tongue) occurs on the island portion of the site. In addition, two buck mule deer were seen near this site.

Photo 5.2.

Hymenoxys cooperi
Ipomopsis congesta
Ivesia sabulosa
Juncus bufonius
*Juniperus osteosperma**
Lappula occidentalis
Lepidium lasiocarpum
Leptodactylon pungens
Lesquerella kingii
*Lewisia rediviva**
Lupinus argenteus
Machaeranthera canescens
*Mentzelia albicaulis**
Microsteris gracilis
Microsteris lindleyi
Mimetanthe pilosa
Mimulus densus
Mimulus suksdorfii
Munroa squarrosa
Nama densum
Navarretia brewerii
Oenothera avita
*Opuntia polycantha**
Penstemon humilis
*Penstemon pahutensis**
Phlox longfolia
*Pinus monophylla**
Plantago patagonia
Poa fendleriana
Polygonum douglasii
*Purshia tridentata**
*Quercus gambellii**
*Ribes velutinum**
*Sisymbrium altissimum**
*Sphaeralcea ambigua**
*Stephanomeria spinosa**
Stipa comata
*Stipa hymenoides**
Stipa pinetorum
Trifolium andersonii
*Yucca baccata**

Tribal representatives identified 23 (31%) of the 74 plants observed at this site.

This site is situated at an altitude of 2,250 m. The study site is located on one of the more prominent peaks in the area. Echo peak is blanketed with a piñón-juniper open canopy forest, dominated by *Pinus monophylla**. The summit has been flattened and bladed for a microwave relay station which explains the presence of numerous adventives. The study area includes the north, west and east facing slopes which may be quite steep. Bedrock, of igneous extrusive material, is exposed to a considerable degree. Residual soils are loamy and in many instances covered with much organic debris, mostly cones and needle leaves derived from the robust piñóns. Animals sighted on Echo Peak include mountain bluebirds, red tail hawk, Swainson's thrush, rock wren, cottontail rabbit and small lizards.

Photo 5.3.

Streptanthus cordatus
Tetradymia canescens

Tribal representatives identified 14 (35%) of the 40 plants observed at

This site is at an altitude of 2,000 m. The study site is located at the bottom of a canyon and encompasses a broad flat valley. Boulder cliffs of the Timber Mountain Tuff border the valley. The valley is generally flat with deep residual loamy to coarse sandy soils. The flats are dominated by *Artemisia tridentata*, Chrysothamnus viscidiflorus viscidiflorus, and Stipa comata.* Species dominating the slopes include *Pinus monophylla*, Juniperus osteosperma*, and Artemisia tridentata*.*

The rimrock, with its cliffs and large boulders, provides habitat for the following dominants: *Pinus monophylla*, Juniperus osteosperma*, Artemisia tridentata*, Ephedra viridis*, Purshia mexicana*, Symphoricarpos longiflorus, Haplopappus nanus, and Quercus gambellii*.* Hummingbirds, ravens, turkey vultures and lizards were among the animals noted at this location.

The plants present at this site include:

Agropyron spp.
Arabis shockleyi
Astragalus calycosus
Astragalus lentiginosus
Artemisia dracunculus
*Artemisia tridentata**
Brickellia californica
Bromus tectorum
*Calochortus bruneaunis**
Carex rossii
Castilleja chromosa
Castilleja linariaefolia
Chaenactis douglasii
*Chenopodium fremontii**
*Chrysothamnus nauseosus**
Chrysothamnus viscidiflorus (2 sp.)
Crepis intermedia
Cryptantha circumsissa
Cryptantha confertifolia
Cryptantha flavoculata
Cryptantha gracilis
Descurainia pinnata
Elymus cinereus
*Elymus elymoides**
Linanthus septentrionalis
Lupinus argenteus
Lupinus brevicaulis
Linum lewisii
*Mentzelia albicaulis**
Mimulus spissus
Mimulus suksdorfii
*Mirabilis multiflora**
*Eriastrum eremicum**
Eriogonum caespitosum
Eriogonum deflexum
Eriogonum esmeraldense
Eriogonum microthecum
Eriogonum ovalifolium
Eriogonum panamintense
Eriogonum umbellatum
Gayophytum ramosissimum
*Gilia inconspicua**
Heterotheca villosa
Hilaria jamesii

Ipomopsis congesta
Ivesia sabulosa
*Juniperus osteosperma**
Lappula occidentalis
Leptodactylon pungens
Lesquerella kingii
Muhlenbergia richardsonis
*Opuntia polycantha**
*Penstemon floridus**
Penstemon humilis
*Penstemon pahutensis**
Penstemon rostriflorus
Petradoria pumila
Phlox longifolia
*Pinus monophylla**
*Purshia mexicana**
*Purshia tridentata**
*Rosa woodsii**
Senecio multilobatus
*Sphaeralcea ambigua**
Stephanomeria spinosa
Stipa comata
*Stipa hymenoides**
Stipa pinetorum
Symphoricarpos longiflorus
Townsendia scapigera

Tribal representatives identified 19 (27%) of the 71 plants observed at site B2.

This site is situated at an altitude of 2,050 m. The study site encompasses two discrete vegetation types. The gently southwest sloping portion has deep, loamy to sandy residual soils littered with fist sized or larger rocks of igneous extrusive origin. The following dominate: *Artemisia tridentata**, *Stipa comata*, *Stipa hymenoides**, *Tetradymia canescens*, *Chrysothamnus viscidiflorus viscidiflorus*, and *Chrysothamnus viscidiflorus puberulus*.

Photo 5.4. Sage and rabbitbrush in wash

The upper portion of the site is more or less flat and consists of bedrock outcrops interspersed with loamy soils that support the following dominants: *Pinus monophylla**, *Juniperus osteosperma**, and *Artemisia nova**.

Plants present at Site B-3 include:

Arabis spp.
Arenaria congesta
*Artemisia nova**
*Artemisia tridentata**
Astragalus calycosus
Astragalus lentiginosus
Astragalus purshii
Bouteloua gracilis
*Ceratoides lanata**
Chaenactis douglasii
*Chenopodium fremontii**
Chrysothamnus viscidiflorus (2 sp.)
Cryptantha circumsissa
Cryptantha gracilis
Cryptantha scoparia
Cryptantha virginensis
Delphinium andersonii
*Ephedra viridis**
Eriogonum fasciculatum
Eriogonum microthecum
Eriogonum ovalifolium
*Gilia inconspicua**
Gutierrezia sarothrae
Hilaria jamesii
Ipomopsis congesta
*Juniperus osteosperma**
Lappula occidentalis
Leptodactylon pungens
Lesquerella kingii
Linum lewisii
*Mentzelia albicaulis**
Mimulus spissus
Mimulus suksdorfii
*Opuntia polycantha**
Orobanche corymbosa
Orobanche fasciculata
Phacelia saxicola
Phlox longifolia
*Pinus monophylla**
*Salsola iberica**
*Sphaeralcea ambigua**
Stephanomeria spinosa
Stipa comata
*Stipa hymenoides**
Tetradymia canescens
Townsendia scapigera

[redacted]

Haplopappus nanus

Tribal representatives identified 14 (29%) of the 49 plants observed at site B3.

Photo 5.5 rabbitbrush in [redacted] nd.

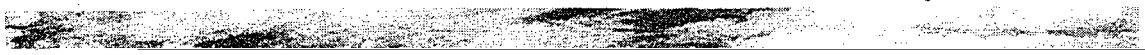


Photo 5.6. Sage flats at

Phlox longifolia
*Pinus monophylla**
*Purshia mexicana**
*Salsola iberica**
Senecio multilobatus
*[redacted]altissimum**
*Sphaeralcea ambigua**
Symphoricarpos longiflorus
*Yucca baccata**

Tribal representatives identified 20 (40%) of the 50 plants observed at site C1.

This site is at an altitude of 1,850 m. The site lies just to the south of protected type-site locality of *Astragalus beatleyi*. A broad, flat wash with deep sandy soils comprises the majority

[redacted]

Dominant species in the area include: *Chrysothamnus nauseosus**, *Artemisia tridentata**, *Artemisia nova**, *Poa fendleriana*, *Stipa comata*, *Eriogonum microthecum*, *Purshia mexicana**, *Stipa hymenoides**, *and Haplopappus nanus*. Junipers are scattered in the general area but the study site consists primarily of the above shrubby species.

Photo 5.7. Blooming rabbitbrush at

Photo 5.8. Overview of

*Opuntia polycantha**
Oryzopsis micrantha
*Penstemon floridus**
Penstemon humilis
Phacelia fremontii
Phacelia peirsoniana
Phlox longifolia
*Pinus monophylla**
Poa fendleriana
*Purshia mexicana**
*Ribes cereum**
*Salsola iberica**
*Stanleya pinnata**
Stipa comata
*Stipa hymenoides**
Streptanthus cordatus
Symphoricarpos longiflorus
*Yucca baccata**

Tribal representatives identified 21 (33%) of the 63 plants observed.

The next portion of this Chapter summarizes the plants identified by tribal representatives and their uses. Where the Indian name was available it is included in the discussion. The uses for

Artemisia nova/black sagebrush

Southern Paiute and Western Shoshone representatives identified black sagebrush (Paiute *sangwav*, *sua'piv*; Shoshone *bahopi*) as a medicinal and ceremonial plant. The leaves and stems are brewed as a medicinal tea. In addition, the leaves are boiled and the steam is used as a vaporizer for treating colds. Fresh or chewed leaves are used as a poultice. The leaves and stems are also ceremonially burned and used to "smoke" or purify people and things. Bark and wood are used for fuel, and wood is used in construction. These useful parts are stored for future use. The plant is currently used by Southern Paiute and Western Shoshone people.

Artemisia tridentata/big sagebrush

Representatives of all three ethnic groups and the LVIC identified sagebrush (Paiute *sangwav*; Shoshone *bahopi*, *povi*). Various parts of this plant are used for numerous purposes. Young shoots, leaves and stems are used for smoking meat, as a medicinal tea, or ceremonial burning for purification. Southern Paiute representatives mentioned using stems and leaves as decoration for Native American Church marriage ceremonies. Leaves are also used as a wash, to make a soap for basket cleaning, a charm for romantic attraction, and, when boiled, as a vaporizer for treating colds. Bark and wood are used for fuel and construction (structures and clothing). Bark is also used in a hunting ceremony among Western Shoshone people. The sap is chewed as a gum. Southern Paiute and Western Shoshone people mentioned that sagebrush is a part of traditional stories and legends. Southern Paiutes, Western Shoshones, and Owens Valley Paiutes manage sagebrush and foster its growth by pruning bushes and transplanting cuttings. This very important plant is still used today.

Calochortus bruneaunis/sego lily

Southern Paiute and Western Shoshone representatives identified sego lily (Paiute *sixo'o*; Shoshone *se'go*) as a food plant. The bulb of the plant was eaten. Southern Paiute representatives reported that the bulbs are stored for future use. Sego lily bulbs are still eaten today.

Castilleja martinii/paintbrush

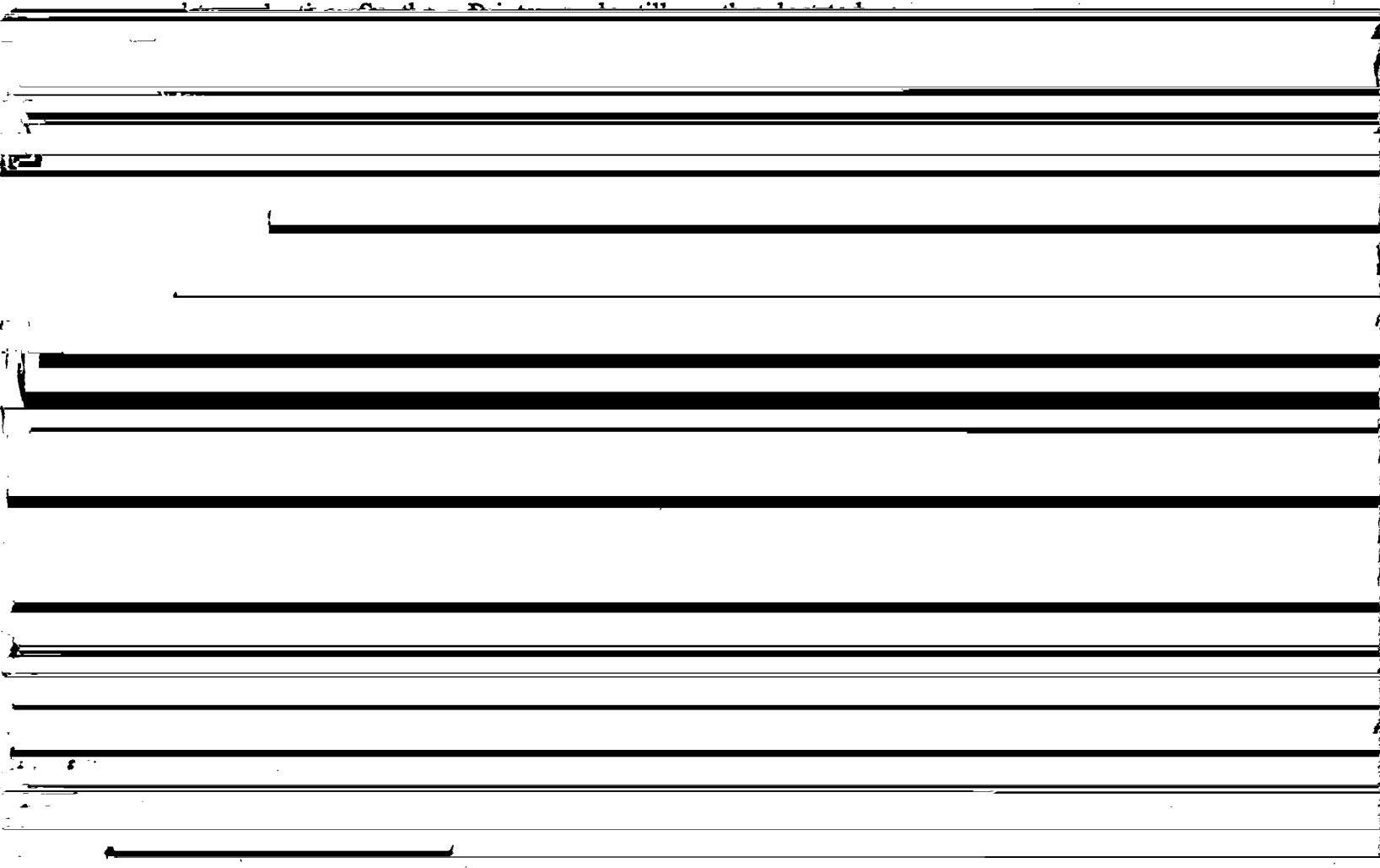
Owens Valley Paiute representatives identified paintbrush as a food plant. The fruit or flower bud is eaten fresh. The plant is still used today.

Ceratoides lanata/winterfat

A Western Shoshone representative identified winterfat as a medicinal plant. The stems, leaves, and flowers are brewed as a preferred medicinal tea. Useful parts are stored for future use. The plant is still used today.

Chenopodium fremontii/Fremont goosefoot

Southern Paiute and Western Shoshone representatives identified Fremont goosefoot (Paiute *sax'watikup*; Shoshone *u'uphi*) as a food plant. The young shoots, stems, leaves, and seeds are eaten. These parts are stored for future use. Southern Paiute people manage the plant by pruning



Chrysothamnus nauseosus/rabbitbrush

Southern Paiute and Western Shoshone representatives identified rabbitbrush (Paiute *s'kump*; Shoshone *su'pimba*) as a multipurpose plant used for a variety of purposes. Western Shoshone representatives mentioned that the stems, leaves, and flowers of rabbitbrush are brewed for a medicinal tea, wash, and poultice. Both Paiute and Shoshone representatives mentioned that the flowers of rabbitbrush serve an environmental indicator function. Specifically, when the flowers bloom bright yellow, pinenuts are ready to be harvested. Bark and wood are used for fuel and construction. Western Shoshone representatives mentioned that bark and wood also are used for ceremonies. They also chew the sap as a gum. Shoshone people use the whole rabbitbrush plant for the pinenut ceremony and for making a woman's "hot bed," which is used for medicinal purposes. The rabbitbrush plant is mentioned in Southern Paiute traditional stories and legends. Southern Paiute people manage rabbitbrush by pruning. Useful parts are stored for future use. This important plant is still used today by Southern Paiute and Western Shoshone people.

Coryphantha vivipara var. *rosea*/foxtail or beehive cactus

Southern Paiute and Western Shoshone representatives identified foxtail cactus (Paiute *mapu*

Ephedra nevadensis/Nevada Indian tea

Southern Paiute, Western Shoshone, and Owens Valley Paiute representatives identified Nevada Indian tea (Paiute *hutuup*, *tu'up*; Shoshone *turundi*; Owens Valley Paiute *tutuup*) as a beverage and medicinal plant. The spikelets are brewed as a tea that people drink as a beverage and use as a medical treatment for kidney and other ailments. The spikelets are also used in Southern Paiute baskets. Southern Paiute people manage the plant by pruning. The spikelets are dried and stored for future use. Members of the three ethnic groups still use the plant today.

Ephedra viridis/Indian tea

Southern Paiute, Western Shoshone, and Owens Valley Paiute representatives identified this species of Indian tea as a beverage and medicinal plant. The spikelets are brewed as a beverage and medicinal tea. Southern Paiute and Owens Valley Paiute people use the wood of the plant for fuel. Western Shoshone people also use the wood to make traps. They also burn the spikelets and use the ashes for medicinal purposes. Indian tea is mentioned in Owens Valley Paiute traditional legends. Useful parts are stored for future use. Western Shoshone people manage the plant by pruning. Members of the three ethnic groups continue to use the plant today.

Eriastrum eremicum/desert eriastrum

An Owens Valley Paiute representative identified desert eriastrum (Indian name not remembered) as a medicinal plant. The leaves and flowers were brewed as a medicinal tea that functioned as a laxative. Leaves and flowers were dried and stored for future use. The plant is no longer used.

Erodium cicutarum/herringbill

A Southern Paiute representative identified herringbill (*wyuvimp*) as a food plant. The seeds were gathered and eaten. Seeds could be dried and stored for future use. The plant is no longer used.

Euphorbia albomarginata/spurge, rattlesnake weed

Southern Paiute representatives identified spurge or rattlesnake weed (*tuvika'xaiv*) as a medicinal plant. The whole plant is used as an eye medicine. Young shoots, stems, leaves, and flowers are used as a snakebite medicine and brewed as a tea to treat kidney ailments. Useful

Grayia spinosa/spiny hop sage

An Owens Valley Paiute identified spiny hop sage (Indian name not remembered) as a food plant. The seeds of the plant are gathered and eaten. Seeds can be dried and stored for future use. The plant is still used today.

Juniperus osteosperma/juniper, cedar

Southern Paiute, Western Shoshone, Owens Valley Paiute, and LVIC representatives identified cedar or juniper (Paiute *wa'ap*; Shoshone *suwavi*, *sawabi*; Owens Valley Paiute *hunuvu*) as a plant used for a wide variety of purposes. Southern Paiute people use the stems and leaves, or boughs, which are burned ceremonially as a purifying medicine. Boughs are also used to make a medicinal wash and tea. Southern Paiute and Western Shoshone people also use the wood for ceremonial purposes. Bark is also used ceremonially among LVIC members. Bark is also used to tan hides. Wood, bark, and branches are used as fuel and for construction. The juniper berry is eaten, and the seeds are used to make necklaces. Cedar is mentioned in Southern Paiute traditional stories. Southern Paiute people manage cedar by pruning. Useful parts are stored for future use. This very important plant is still used today.

Lewisia rediviva/bitter root

A Western Shoshone representative identified bitter root (*gungah*) as a food plant. The roots of the plant are collected, boiled and eaten. The roots are dried and stored for future use. The plant is still used today.

Lichen/lichen

Southern Paiute representatives identified lichen (*timpapsuchicu*) as a medicinal and religious plant. Lichen is used as a poultice for sores. It is also mentioned in songs and stories that

Mirabilis multiflora/four o'clock

Southern Paiute representatives identified four o'clock (*toxo'owatsiv*) as an ornamentation plant. The plant is used for decorative purposes. Southern Paiute people managed the plant by

Pinus monophylla/pinon pine

Southern Paiute, Western Shoshone, and Owens Valley Paiute representatives identified pinon pine (Paiute *tuvap*, *tu'uv*; Shoshone *wahpi*; Owens Valley Paiute *tuva*) as a multipurpose plant. The pinenut is collected in the fall, roasted, and eaten. The pine pitch is used as glue, a ceremonial medicine for purification (burned), a medicinal tea, a poultice, and for construction. The wood is used as fuel and for construction. Bark and cones are also used as fuel. Boughs are used for ceremony as well, being burned to purify. Pine is mentioned in Southern Paiute and Western Shoshone traditional stories. This very important plant is still used today.

Purshia mexicana/cliffrose

Western Shoshone and Southern Paiute representatives identified cliffrose (Paiute *hunap*; Shoshone *hunavi*) as a medicine and construction plant. The stems and leaves are prepared as a medicinal tea and a poultice. Wood of the cliffrose is used for construction and as fuel. Cliffrose is mentioned in Western Shoshone traditional stories. The plant is still used today.

Purshia tridentata/buckbrush

Southern Paiute representatives identified buckbrush (*unap*) as a multipurpose plant. Stems and leaves are used to prepare medicinal tea and poultices. Bark is used for making clothing. Stems and wood are used for fuel. The fruit is collected and eaten. Buckbrush is mentioned in Southern Paiute traditional stories. Southern Paiute people manage the plant by pruning. The plant is still used today.

Quercus gambellii/scrub oak

Owens Valley Paiute and Southern Paiute representatives identified scrub oak (Paiute *tuav*; Owens Valley Paiute *tsigino*, *we'a*) as a food and utilitarian plant. Acorns are collected, ground, and eaten. Young shoots, stems, leaves and wood are used in construction. Wood is also used as fuel. Southern Paiute people manage the oak by pruning. Useful parts are stored for future use. The plant is still used today.

Rhus aromatica/skunkbush, lemonade berry, sumac

Southern Paiute people identified sumac (*i'is*, *su'uv*) as a food and basket plant. This species of sumac is different than the *Rhus trilobata* that is normally used for food and basket making. The latter species of sumac or squawbush is so important for Southern Paiute basketmaking that Paiute people commonly refer to the plant as "willow." The fruit of *R. aromatica* is eaten, and the straight young shoots are used in basketmaking. Fruit and shoots are dried and stored for future use. The plant is still used today.

Ribes cereum/white squaw currant

Southern Paiute and Western Shoshone representatives identified squaw currant (Paiute name not remembered; Shoshone *bogombi*) as a food plant. The berries of the plant are collected and eaten. Squaw currant is mentioned in Southern Paiute traditional stories. Southern Paiute people manage the plant by pruning. The plant is still used today by members of both ethnic groups.

Ribes velutinum/desert gooseberry

Southern Paiute, Western Shoshone, Owens Valley Paiute, and LVIC representatives identified desert gooseberry (Indian names not remembered) as a food and utilitarian plant. The fruit is collected and eaten. Wood of gooseberry is used as fuel among LVIC and Southern Paiute people. Southern Paiute people also use wood for construction. Gooseberry is mentioned in traditional Southern Paiute stories. Southern Paiutes manage gooseberry by pruning. The plant is still used today by members of all four groups.

Rosa woodsii/wild rose, woods rose

Southern Paiute, Western Shoshone, and Owens Valley Paiute representatives identified wild rose (Paiute *pikikurump*; Shoshone *siwa'vit*, *cimbi*; Owens Valley Paiute name not remembered). Owens Valley Paiute people ate the bud of the wild rose in the past. Southern Paiute people use the stems, leaves, and flowers to prepare a ceremonial wash and a medicinal tea. The bulb is used to make jam. The whole plant is used for decoration. Western Shoshone people use the stems to make arrows and baskets. The flower bud is prepared as a tea. Wild rose is mentioned in traditional Southern Paiute and Western Shoshone stories. Southern Paiute people manage wild rose by transplanting cuttings. The plant is still used today by Southern Paiute and Western Shoshone people.

Salsola iberica/Russian thistle

Southern Paiute representatives identified Russian thistle (*manav*) as a fuel plant. The stems and leaves are used as fuel. Russian thistle is mentioned in Southern Paiute stories. The plant

Sphaeralcea ambigua/globe mallow

Southern Paiute representatives identified globe mallow (*tupwiv*) as a food and medicine plant. The flower buds were collected and eaten. Stems and bark were prepared as a hair gel. The roots were prepared as an eye medicine. The plant is no longer used.

Stanleya pinnata/prince's plume, Indian spinach

Owens Valley Paiute, Southern Paiute, and Western Shoshone representatives identified prince's plume, or Indian spinach (Paiute *tumar*; Shoshone *tu'mara*; Owens Valley Paiute name not remembered), as a food plant. The leaves and young shoots are collected boiled, and eaten as greens. Indian spinach is mentioned in traditional Southern Paiute stories. Southern Paiute people manage Indian spinach by pruning. The plant is still used today by Southern Paiute and Western Shoshone people.

Stipa hymenoides/Indian ricegrass

Owens Valley Paiute, Southern Paiute, and Western Shoshone representatives identified Indian ricegrass (Paiute *wa'ai*, *wa'aiv*; Shoshone *wai*; Owens Valley Paiute *pacita*) as a food plant. The seeds are collected, winnowed, and prepared as a bread or a gravy mush. Western Shoshone harvest the stems for use as horse feed. Indian ricegrass is mentioned in traditional Southern Paiute stories. The plant is still used today by Owens Valley Paiute and Western Shoshone people.

Yucca baccata/banana yucca, blue yucca

Southern Paiute and Western Shoshone people identified banana yucca (Paiute *uusiv*; Shoshone name not remembered) as a food and utilitarian plant. Yucca fruits are collected and eaten fresh or roasted. Western Shoshone used dried leaves as kindling. Southern Paiute people use the leaves for making baskets and sandals. The leaves are also used as a soap. Spines are used as needles. The yucca roots are used for shampoo when mixed with water. Yucca is mentioned in Southern Paiute and Western Shoshone traditional stories. The plant is still used today by Southern Paiute people.

Summary

The above sections illustrate the traditional and contemporary importance of plants used for various purposes by Indian people. Of the 42 plant species identified by tribal representatives, fully 86% (36 of 42) are still used today. Only 14% (6 of 42) of the identified plants are no longer used. As with archaeological sites, however, it can be argued that access provides Indian people with the opportunity to "use," or re-establish spiritual ties or relationships, with plant resources. It is important to note that many of these plants are currently used for similar purposes in other areas where they grow. Indian people still harvest and process pinenuts, grass seeds, cactus fruits, yucca fruits, and berries for consumption. Fiber from yucca and sumac are

still harvested for basketmaking, and the roots of spikerush are still used to make designs. Both varieties of Indian tea are harvested and boiled to use as a drink. Indian spinach and chenopod greens continue to be harvested as food. Wood from trees and shrubs continue to be used in construction and as fuel when camping. Sagebrush and cedar, for example, are still used for ceremonies and praying. In areas where Indian people live, some of these plants are actively managed by burning old growth to foster new growth, transplanting, and pot irrigating in home gardens. While some of the traditional uses of plants have disappeared through time, many plants identified during the NTS on-site visits and their uses persist in Western Shoshone, Owens Valley Paiute, and Southern Paiute culture. They remain important cultural resources to these Indian peoples. Mitigation recommendations for plant resources are presented in Chapter Eight.

Cultural Significance of Indian Plants

Scientists have recently begun to quantify aspects of American Indian plant use in order to

an equal value of 1. Multiple use plants and plants that had many useful parts thus had higher values in the quality of use category.

Storage and management were added as variables and assigned values in revising Turner's intensity of use category. Values in this category ranged from 1 to 5, based on whether the plant was simply collected and used, stored for a period of time, or actively maintained through manipulations such as transplanting, burning, or cultivation. Intensively managed plants were given a value of 5. Depending on the length of time a plant was stored, values of between 3 and 4 were given. This procedure is generally consistent with Turner's intensity of use component (Turner 1988:281, Table 2).

Exclusivity of use values were simplified such that preferred species or those that are the exclusive species for achieving any particular purposes were assigned a value of 2. A value of 1 was assigned to plants that were one of several possible sources for a specific purpose (Stoffle, Halmo, Evans, and Olmsted 1990:424).

To supplement the above factors, we added a *contemporary use* category. The ethnobotanical survey instrument contained questions regarding the contemporary use of plants and whether or not traditional knowledge about them is being transmitted to younger generations. Contemporary use of plants is augmented by the fact that traditional use information is being transmitted from elders to members of younger generations. For this category, plants which are currently used were given a value of 2, and plants no longer being used were assigned a value of 1 (Stoffle, Halmo, Evans, and Olmsted 1990:424).

Using these revised criteria, the ICS score is calculated using the following equation:

$$\text{ICS} = p/u \times i \times e \times c$$

where ICS is equal to the quality of use (p/u), measured as the total number of uses and/or parts used for a specific purpose, multiplied by the intensity of use (i), the exclusivity of use (e), and the contemporary use (c) values (Stoffle, Halmo, Evans, and Olmsted 1990:422-425). While the assigning of values is necessarily an etic process performed by ethnographers, it is important to point out that Indian people participated in developing the criteria for each use category. The values assigned take into account the Indian perspective as much as possible. Table 5.3 lists the 42 species of plants along with their Ethnic Index of Cultural Significance (EICS) score and the Cumulative Index of Cultural Significance (CICS) score. Table 5.4 ranks the plants by their CICS score.

Cultural Triage

Indian people generally want to protect all individual plants when confronted with the prospect of development projects destroying plants in traditional lands. We have termed this response *holistic conservation* (Stoffle and Evans 1990). It is likely that development will proceed somewhere, however, because ownership and thus authority over decisions about land

Table 5.3. Ethnic Group and CICS Scores for Plants

Scientific Name	Common Name	EICS				CICS
		Western Shoshone	Southern Paiute	Owens Valley Paiute	LVIC	
Artemisia nova	black sagebrush	60	18	NI*	NI	78
Artemisia tridentata	sagebrush	150	190	40	36	416
Calochortus bruneaunis	sego lily	2	6	NI	NI	8
Castilleja martinii	paintbrush	NI	NI	2	NI	2
Ceratoides lanata	winterfat	36	NI	NI	NI	36
Chenopodium fremontii	Fremont goosefoot	6	30	NI	NI	36
Chrysothamnus nauseosus	rabbitbrush	102	130	NI	NI	232
Coryphantha vivipara	foxtail cactus	9	8	NI	NI	17
Eleocharis palustris	spikebrush	2	24	NI	NI	26
Elymus elymoides	squirrel tail	NI	18	NI	NI	18
Ephedra nevadensis	Indian tea	36	40	12	NI	88
Ephedra viridis	Indian tea	90	30	42	NI	162
Eriastrum eremicum	desert eriastrum	NI	NI	6	NI	6
Erodium cicutarium	herringbill	NI	3	NI	NI	3
Euphorbia albomarginata	spurge, rattlesnake weed	NI	54	NI	NI	54
Gilia inconspicua	gilia (phlox family)	3	NI	NI	NI	3
Grayia spinosa	spiny hop sage	NI	NI	6	NI	6
Juniperus osteosperma	juniper; cedar	70	150	24	50	294
Lewisia rediviva	bitter root	6	NI	NI	NI	6

Table 5.3 continued

Scientific Name	Common Name	EICS				CICS
		Western Shoshone	Southern Paiute	Owens Valley Paiute	LVIC	
Lichen	lichen	NI	8	NI	NI	8
Stephanomeria spinosa	spiny wire lettuce	2	NI	NI	NI	2
Mentzelia albicaulis	desert corsage	6	6	3	NI	15
Mirabilis multiflora	four o'clock	NI	10	NI	NI	10
Nicotiana attenuata	coyote tobacco	18	18	3	NI	39
Opuntia polycantha	grizzly bear cactus	NI	20	NI	NI	20
Orobanche corymbosa	broomrape; wild asparagus	4	2	NI	NI	6
Penstemon floridus	Panamint beard tongue	NI	NI	2	NI	2
Penstemon pahutensis	Pahute beard tongue	NI	12	2	NI	14
Pinus monophylla	pinon pine	110	130	90	NI	330
Purshia mexicana	cliffrose	96	60	NI	NI	156
Purshia tridentata	buckbrush	NI	80	NI	NI	80
Quercus gambelii	scrub oak	NI	60	12	NI	72
Rhus aromatica	sumac	NI	12	NI	NI	12
Ribes cereum	white squaw currant	6	20	NI	NI	26
Ribes velutilnum	desert gooseberry	6	40	2	12	60
Rosa woodsii	wood's rose	40	90	3	NI	133
Salsola iberica	Russian thistle	NI	18	NI	NI	18
Sisymbrium altissimum	tumbling mustard	NI	3	NI	NI	3
Sphaeralcea ambigua	globe mallow, desert mallow	NI	12	NI	NI	12
Stanleya pinnata	price's plume, Indian spinach	6	30	1	NI	37
Stipa hymenoides	Indian ricegrass	12	10	10	NI	32
Yucca baccata	banana yucca	9	60	NI	NI	69

* NI = Not Identified

Table 5.4. Indian Plants Ranked by CICS Score

Scientific Name	Common Name	EICS				CICS
		Western Shoshone	Southern Paiute	Owens Valley Paiute	LVIC	
Artemisia tridentata	sagebrush	150	190	40	36	416
Pinus monophylla	pinon pine	110	130	90	NI*	330
Juniperus osteosperma	juniper; cedar	70	150	24	50	294
Chrysothamnus nauseosus	rabbitbrush	102	130	NI	NI	232
Ephedra viridis	Indian tea	90	30	42	NI	162
Purshia mexicana	cliffrose	96	60	NI	NI	156
Rosa woodsii	wood's rose	40	90	3	NI	133
Ephedra nevadensis	Indian tea	36	40	12	NI	88
Purshia tridentata	buckbrush	NI	80	NI	NI	80
Artemisia nova	black sagebrush	60	18	NI	NI	78
Quercus gambelii	scrub oak	NI	60	12	NI	72
Yucca baccata	banana yucca	9	60	NI	NI	69
Ribes velutinum	desert gooseberry	6	40	2	12	60
Euphorbia albomarginata	spurge, rattlesnake weed	NI	54	NI	NI	54
Nicotiana attenuata	coyote tobacco	18	18	3	NI	39
Stanleya pinnata	price's plume, Indian spinach	6	30	1	NI	37
Ceratoides lanata	winterfat	36	NI	NI	NI	36
Chenopodium fremontii	Fremont goosefoot	6	30	NI	NI	36
Stipa hymenoides	Indian ricegrass	12	10	10	NI	32
Eleocharis palustris	spikerush	2	24	NI	NI	26

Table 5.4 continued

Scientific Name	Common Name	EICS				CICS
		Western Shoshone	Southern Paiute	Owens Valley Paiute	LVIC	
Ribes cereum	white squaw currant	6	20	NI	NI	26
Opuntia polycantha	grizzly bear cactus	NI	20	NI	NI	20
Elymus elymoides	squirrel tail	NI	18	NI	NI	18
Salsola iberica	Russian thistle	NI	18	NI	NI	18
Coryphantha vivipara	foxtail cactus	9	8	NI	NI	17
Menzelia albicaulis	desert corsage	6	6	3	NI	15
Penstemon pahutensis	Pahute beard tongue	NI	12	2	NI	14
Sphaeralcea ambigua	globe mallow, desert mallow	NI	12	NI	NI	12
Rhus aromatica	sumac	NI	12	NI	NI	12
Mirabilis multiflora	four o'clock	NI	10	NI	NI	10
Calochortus bruneaunis	sego lily	2	6	NI	NI	8
Lichen	lichen	NI	8	NI	NI	8
Lewisia rediviva	bitter root	6	NI	NI	NI	6
Eriastrum eremicum	desert eriastrum	NI	NI	6	NI	6
Orobanche corymbosa	broomrape; wild asparagus	4	2	NI	NI	6
Grayia spinosa	spiny hop sage	NI	NI	6	NI	6
Gilia inconspicua	gilia (phlox family)	3	NI	NI	NI	3
Erodium cicutarium	herringbill	NI	3	NI	NI	3
Strymbrium altissimum	tumbling mustard	NI	3	NI	NI	3
Castilleja martinii	paintbrush	NI	NI	2	NI	2
Stephanomeria spinosa	spiny wire lettuce	2	NI	NI	NI	2
Penstemon floridus	Panamint beard tongue	NI	NI	2	NI	2

use in most traditional lands have been lost to the dominant society. As a consequence, Indian people are faced with a forced choice situation in which they must single out certain plants for special protection, knowing that doing so increases the probability that other plants are more likely to be destroyed. We have termed this response *cultural triage* (Stoffle and Evans 1990).

Egalitarian Triage

Plants can be triaged by calculating their cultural significance. We have developed two procedures for calculating the cultural significance of plants. One procedure is termed *egalitarian triage* (Stoffle, Halmo, Evans, and Olmsted 1990:421), which simply involves tallying the number of plants identified by members of an ethnic group to determine the significance of an area.

Weighted Triage

A second procedure involves using a *weighted triage* score (Stoffle, Halmo, Evans, and Olmsted 1990:421), which involves adding the ICS scores for each plant identified by an ethnic group to produce a numeric value for all plant resources in a study area.

Site Significance Based on Plants

Contemporary American Indian people have lost traditional cultural resources to scientific and development interests (Stoffle, Halmo, Olmsted, and Evans 1990, Vecsey 1991). For Indian people, the significance of these resources derives from their meaning in ethnic, religious, cultural, and historic contexts rather than scientific and economic contexts. To these Indian people, individual cultural resources are integral components of large areas where the resources were used as part of traditional ways of life (Curtis 1992:66-67). So from the Indian perspective, specific cultural resources are intimate parts of *sacred geographic areas* (Walker 1991).

Protection of individual Indian plants is rarely feasible because most Indian plants are commonly found in plant communities and are generally dense in particular ecozones, rather than being rare and endangered plants. It may therefore be more feasible to protect areas where significant combinations of Indian plants grow than to protect individual plants. To assess the significance of an area based on the plant resources present, a meaningful unit of area is defined and Spatial Area Significance (SAS) scores are calculated. For example, the authors identified seven local use areas during the YMP. When Spatial Area Significance (SAS) scores were calculated using both egalitarian triage and weighted triage procedures, policy relevant differences were demonstrated (Stoffle, Halmo, Evans, and Olmsted 1990:429).

To assess the SAS of places in the Pahute and Rainier Mesas study area of the NTS, sites were defined as meaningful units of area. Site descriptions are important for providing a sense of the make up of each location at which plants were identified by Indian people.

Site Significance

Indian people tend to interpret sites as related components of larger areas. In areas of former residence, such as spring and marshland oases or riverine deltas, and in less permanent camping and food processing areas, plants were important resources. Each site was evaluated in terms of the plant resources it contained. A site significance score was calculated using both the egalitarian triage and weighted triage procedures. The egalitarian triage score (ETS) was calculated by adding the total number of plants identified by Indian people in a local use area. The weighted triage score (WTS) was calculated by adding the ICS [illegible] of plants identified at the site.

In Table 5.5 the nine sites are ranked by their site significance scores, derived from both the egalitarian triage and the weighted triage procedures. The two procedures yield different results, as shown. The relative ranking of the sites is altered when the relative contributions of the plants to Indian people are included in the calculation.

As can be seen from Table 5.5, [redacted] has the highest number of

Table 5.5. Site Significance Scores Based on Indian Plants, Ranked By WTS

Site	Site Significance			
	Rank	ETS	Rank	WTS
	2	21	1	2,080
	2	21	2	1,976
	1	23	3	1,825
	4	20	4	1,819
	5	18	5	1,592
	7	14	6	1,460
	6	15	7	1,424
	8	13	8	1,091

A Rapid Assessment Method for Protecting Indian Plant Sites

The weighted triage procedure, using the ICS calculations for plants, has proven to be a useful methodological tool for rapidly assessing the significance of areas with Indian plants. Other methods include protecting individual plants and protecting areas based on how many types of plants are located there. In general, it is difficult to protect individual plants because most are located throughout the study area. At this time, the best way to protect plants is by protecting places that have more plant types (egalitarian triage) or protecting areas that have highest plant significance scores.

Upon reviewing the findings of the NTS ethnobotany study, DOE/NV-EPD requested that a master list of Indian plants, compiled from both the YMP and NTS ethnobotanical studies, be developed into a checklist. This checklist could then be used in the field by biologists during survey work in locations slated for possible DOE/NV activities. The *Native American Plant Species Checklist* is presented as Appendix E.

Using this checklist, biologists could quickly be able to check off whether each Indian plant on the checklist is (1) present, (2) not present, or (3) whether more information is needed in terms of identifying a plant at a particular location. For each location surveyed, the completed checklist will provide an immediate tabulation of (1) the egalitarian triage site score, or the number of Indian plants present at a location, and (2) a calculation of the weighted triage site score, based on the ICS scores that have been calculated for all of the Indian plants on the checklist. The weighted triage site scores can then be used to determine whether or not potential ground-disturbing DOE/NV activities should be moved from a highly significant Indian botanical area to a less significant site. Using this method, the evaluation and protection of significant Indian plant resource areas can be rapidly achieved.

Another important category of cultural resource to American Indian people who formerly inhabited the NTS study area is animals. Chapter Six discusses the contemporary significance of animals to Southern Paiute, Western Shoshone, and Owens Valley Paiute people.

CHAPTER SIX

ETHNOZOOLOGY: A PRELIMINARY VIEW

During the on-site visits the representatives of the seventeen Native American tribes had the opportunity to give their comments and concerns regarding the animals they saw on the NTS. These comments and concerns were recorded on an ethnozoology interview form (see Appendix C), and then later compiled and summarized. Unlike the archaeology and botany interviews, no systematic attempt was made to interview on all of the known animal species found on the NTS. Instead, the interviewing was opportunistic; that is, when someone saw an animal, bird, or insect, and it was a species that had been used or was currently being used by their ethnic group, then an interview was conducted on that species. A total of 50 interviews was conducted on 15 species of animals, birds, and insects observed during the on-site visits.

Uses of Animals

Table 6.1 lists the common and Indian names for the species that were observed. Of these 15 species, two were insects, six were birds, and seven were animals.

Indian Use of Identified Species

In general, most of the 15 identified species were used for food. But there were other uses given as well, and the following sections outline these uses.

Wood Ants

The black wood ants common on Rainier Mesa and Pahute Mesa were identified by Western Shoshone and Southern Paiute representatives for both food and medicinal uses. The Southern Paiute representatives identified the ant as a traditional contraceptive, mixed in food. The ants could be gathered at any time of year, using a stick to get the ants out of the nest. It was important not to destroy the nest, however. Conserving the nest meant that Indian people could come back to the same spot if the ants were needed again.

Table 6.1. Common and Indian Names of Animals

Common Name	Indian Names
Wood Ants	*ani'e*; *on'nee(h)* (WS); *t'siev*; *tuhsiev*; *tu'siev* (SP)
Bobcat	*tukuvits* (SP)
Cicada	*gu'ah*; *ku'a* (WS)
Cottontail	*taputsi* (OVP); *taviti*; *tavuuts* (SP)
Coyote	*turahsunav* (SP)
Deer	*duhayet* (WS); *tahenah*; *tuh'ena* (OVP); *tuhi*; *tuhuya*(SP)
Dove	*hiav*; *hiuv* (SP)
Duck	Indian names not remembered
Ground Squirrel	*ing'wa* (WS)
Hummingbird	*bi'si'i*
Jackrabbit	*kamb* (SP); *kamusi*; *tavusi* (WS); *kuma* (OVP)
Pine Jay (pinenut bird)	*tuvavwitsiits*; *tuuv watsits*; *yamp* (SP)
Redtail Hawk	*kwanansits*; *quinnah* (SP)
Rock Wren	Indian names not remembered
Squirrel	*skuuts* (SP)

The Western Shoshone representatives identified the ants as a food and medicine item. The ants could be mixed in with gravy, or eaten raw. To eat the ants raw, the hind portion of the ant was pulled off and eaten alone or with other food. It has a sweet taste, somewhat like squawbush berries. As a medicine item, the ants were used to treat chicken pox. They could also be used to treat skin sores and infections.

In addition, the Western Shoshone representatives said that ant eggs could be used to feed ducks and as bait when fishing for trout. The time to harvest ant eggs is the summer, and the spring and fall for the ants themselves.

Bobcat

The Western Shoshone representatives identified the commercial fur industry as the primary use of bobcat for them today. While using the bobcat for food in the past was identified, this is no longer done. The paw pads, urine, and glands are ground up and used for lures on bobcat traps. The Western Shoshone representatives said there were areas for trapping bobcat, but that they had to give the areas a rest in order for the bobcat population to be maintained.

Cottontail

The Southern Paiute representatives identified three uses for the cottontail: food, ritual/ceremony, and clothing. The skulls of both the cottontail and the jackrabbit were also used by children for a game of skill. The cottontail can only be taken during the spring, fall, and winter as a food item to avoid the problems of summer ticks and boils. However, if the purpose was for clothing, such as blankets and robes, then the fall and winter were the best months when the fur was thickest. The cottontail does appear in Southern Paiute stories about the destruction of the earth through fire, prior to the earth's destruction through flood. The cottontail survived the fire by hiding under a rabbitbrush.

The Owens Valley Paiute representatives identified the same three uses for cottontail, and added using the bones to make tools to the list. They also said that the best time to take rabbits for food was in the fall, and to avoid taking rabbits in the spring because that was the time the young are being born.

Jackrabbit

The Southern Paiute representatives identified the uses for jackrabbits in similar terms as those for cottontail. The Owens Valley Paiute representatives also identified the same uses of jackrabbit as those for cottontail. In addition, they said the fur is being used on dance costumes, and that the feet were used to brush Indian tobacco before use.

Coyote

The Southern Paiute representatives identified the coyote as a major component of their

In the past deer were taken year round. Current hunting season regulations limit the times for deer hunting and the number of animals hunters can bring in.

The Western Shoshone identified several ceremonial aspects of the deer for their people. The blood, tails, and liver are all used raw in certain ceremonies. Both the tails and kidneys were buried with prayers to ensure success on future deer hunts. They also said that only men ate the internal organs as part of the hunting ritual associated with deer. The blood and fat are used as a lure on coyote traps. The hair, fat, and blood are mixed with cow's milk, eggs, and urine. The mixture is allowed to sit all summer, resulting in what was described in the interview as "strong."

Dove

Doves were used by Southern Paiute people as a food item, either fried or roasted over the coals of a fire.

Ducks

An Owens Valley Paiute representative identified ducks as a food item for them in Owens Valley.

Ground Squirrel

Ground squirrels were identified as having food, ritual/ceremony, clothing, and tool uses by the Western Shoshone representatives. The meat was used as food, as well as other parts of

Pine Jay (Pinenut bird)

The Southern Paiute representatives identified the pine jay, known as the pinenut bird, as being useful for locating pinenut areas ready for harvesting. The cry of the bird and its flight pattern allowed people to find the stands of trees with ripe pinenuts.

Redtail Hawk

The Southern Paiute representatives identified the redtail hawk as having medicinal and ceremonial uses, and was used as part of dance costumes. The feathers are used in dances, headdresses, and as fletching on arrows. The feathers are also used in ceremonies and "doctoring" in the same manner as eagle feathers. The claws are also used in necklaces.

The Western Shoshone representatives identified the same uses for the feathers in ceremonies and for dances. In addition, the hawk down is carried as part of a ritual to protect the carrier from evil spirits.

Rock Wren

The rock wren was identified by a Southern Paiute representative as used for a medicinal charm. The bird was trapped or snared and the bones ground up. The bone powder was then kept in a man's medicine bag as a charm to attract women.

Animal Use Tabulations

Table 6.2 cross-tabulates the 15 observed species with how Indian people used the species in the past. A total of 118 responses were recorded. The predominant past ethnic group use was food (31%), followed by clothing (23%), ritual/ceremony (18%), tools (12%), and medicine (5%). Most species had more than one use, with deer, jackrabbit, and cottontail contributing the most to the total responses.

Table 6.3 cross-tabulates the 15 observed species with how Indian people currently use the animal. The total number of responses drop to 66. The predominant current ethnic group use is food (42%), followed by clothing (21%), ritual/ceremony (18%), tools (3%), and medicine (3%). While the percentages remain similar to that found in Table 6.2, [illegible]

Table 6.2. Past Ethnic Group Use of Animals

Animal Name	Food	Medicine	Ceremony	Clothing	Tools	Other	Total
Wood Ants	4	3	0	0	0	1	8
Bobcat	1	0	0	2	0	0	3
Cicada	3	0	0	0	0	0	3
Cottontail	4	0	3	4	1	0	12
Coyote	0	0	2	0	0	2	4
Deer	10	1	6	10	9	2	38
Dove	2	0	0	0	0	0	2
Duck	1	0	0	0	0	0	1
Ground Squirrel	2	0	2	2	2	0	8
Humming-bird	0	1	2	0	0	0	3
Jackrabbit	8	0	3	8	2	3	24
Pine Jay	0	0	0	0	0	4	4
Redtail Hawk	0	1	2	1	0	0	4
Rock Wren	0	0	1	0	0	0	1
Squirrel	1	0	0	0	0	0	1
Total (Freq.)	36	6	21	27	14	12	116
Total (Percent)	31%	5%	18%	23%	12%	10%	100%

Table 6.3. Current Ethnic Group Use of Animals

Animal Name	Food	Medicine	Ceremony	Clothing	Tools	Other	Total
Wood Ants	0	0	0	0	0	0	0
Bobcat	0	0	0	1	0	2	3
Cicada	3	0	0	0	0	0	3
Cottontail	4	0	2	2	0	0	8
Coyote	0	0	2	0	0	2	4
Deer	10	1	4	10	1	0	26
Dove	0	0	0	0	0	0	0
Duck	1	0	0	0	0	0	1
Ground Squirrel	2	0	0	0	0	0	2
Humming-bird	0	1	2	0	0	0	3
Jackrabbit	8	0	1	0	1	0	10
Pine Jay	0	0	0	0	0	4	4
Redtail Hawk	0	0	1	1	0	0	2
Rock Wren	0	0	0	0	0	0	0
Squirrel	0	0	0	0	0	0	0
Total (Freq.)	28	2	12	14	2	8	66
Total (Percent)	42%	3%	18%	21%	3%	12%	100%

Table 6.4. Past Family Use of Animals

Animal Name	Food	Medicine	Ceremony	Clothing	Tools	Other	Total
Wood Ants	2	1	0	0	0	1	4
Bobcat	0	0	0	0	0	2	2
Cicada	3	0	0	0	0	0	3
Cottontail	4	0	0	2	0	0	6
Coyote	0	0	2	0	0	2	4
Deer	10	1	3	10	6	1	31
Dove	2	0	0	0	0	0	2
Duck	1	0	0	0	0	0	1
Ground Squirrel	2	0	0	2	2	0	6
Humming-bird	0	1	2	0	0	0	3
Jackrabbit	8	0	1	3	2	1	15
Pine Jay	0	0	0	0	0	4	4
Redtail Hawk	0	1	1	0	1	0	3
Rock Wren	0	0	0	0	0	0	0
Squirrel	1	0	0	0	0	0	1
Total (Freq.)	33	4	9	17	11	11	85
Total (Percent)	39%	5%	11%	20%	13%	13%	100%

Table 6.5. Current Family Use of Animals

Animal Name	Food	Medicine	Ceremony	Clothing	Tools	Other	Total
Wood Ants	0	0	0	0	0	0	0
Bobcat	0	0	0	0	0	2	2
Cicada	3	0	0	0	0	0	3
Cottontail	3	0	0	0	0	0	3
Coyote	0	0	2	0	0	2	4
Deer	8	1	2	4	1	0	16
Dove	0	0	0	0	0	0	0
Duck	0	0	0	0	0	0	0
Ground Squirrel	2	0	0	0	0	0	2
Humming-bird	0	1	2	0	0	0	3
Jackrabbit	5	0	2	0	2	1	10
Pine Jay	0	0	0	0	0	4	4
Redtail Hawk	0	0	0	0	0	0	0
Rock Wren	0	0	0	0	0	0	0
Squirrel	0	0	0	0	0	0	0
Total (Freq.)	21	2	8	4	3	9	47
Total (Percent)	45%	4%	17%	9%	6%	19%	100%

"Other" was given as a response nine times (19%), with the remainder of the categories less than five responses each.

Gender and Use of Animal Species

With animals, it is reasonable to expect some gender differentiation between the users of the species. We find, however, that this is not the case. Table 6.6 shows the responses to the questions, "Who used this animal in the past?", and "Who uses this animal now?" The table shows that for the past users, only two species (redtail hawk and rock wren) were said to have been used by men exclusively. Redtail hawk was also said to have been used by women according to one respondent. Most of the responses as to past user gender were "Both" (96%).

The responses to the question concerning present user gender were similar. Rock wrens are not used currently, but redtail hawk was again said to be used only by men. Bobcat also has come to be used only by men due to the increase in commercial trapping for fur. Most of the responses (93%) indicate that both men and women currently use the species (for those species mentioned as currently being used).

Cultural Transmission

Just as with archaeology sites and plants, Indian people pass on cultural knowledge about animals from generation to generation. It is often stated in the literature that the "grandparent" generation is the most important for passing on cultural knowledge to children. Our data indicates that the parent generation is used more often for this cultural transmission, with the grandparent generation contributing less than other people.

Table 6.7 shows the responses to the question "From whom did you learn about this animal?" Mother and Father are clearly the most important (35% and 29% respectively). Other Relative was given as a response 15% of the time. Grandmother and Grandfather were given as responses considerably less than the parent generation (13% and 6% respectively).

Table 6.8 presents the responses to the question "Who have you taught in the past about this animal?" Over fifty percent (53%) of responses were children, and 26% were for grandchildren. The rest of the responses were other relatives and friends and neighbors.

Table 6.9 presents the responses to the question "Who are you teaching now about this animal?" The cultural transmission pattern is reversed from Table 6.8. Only 15% of the responses were for children, while 53% were for grandchildren. There is a rise in the "other relative" category to 21%. The "friends and neighbors" category stayed the same at 12%. The reason for this reversal of the pattern is that, in general, for people who are teaching about animals, they first taught their children (when their children were young), and then when they get grandchildren the elders also teach them about animals. There does not seem to be a stipulation that either the parent or grandparent generation does the teaching. Instead, it seems to depend on the individual who is doing the teaching.

Table 6.6. Gender of Animal Users–Past and Present

	Past User Gender			Present User Gender		
Animal Name	**Men Only**	**Women Only**	**Both**	**Men Only**	**Women Only**	**Both**
Wood Ants	0	0	4	0	0	0
Bobcat	0	0	2	2	0	0
Cicada	0	0	3	0	0	3
Cottontail	0	0	4	0	0	4
Coyote	0	0	2	0	0	2
Deer	0	0	10	0	0	10
Dove	0	0	2	0	0	0
Duck	0	0	1	0	0	1
Ground Squirrel	0	0	2	0	0	2
Hummingbird	0	0	2	0	0	2
Jackrabbit	0	0	8	0	0	8
Pine Jay	0	0	4	0	0	4
Redtail Hawk	1	0	1	1	0	0
Rock Wren	1	0	0	0	0	0
Squirrel	0	0	1	0	0	1
Total (Freq.)	2	0	46	3	0	37
Total (Percent)	4%	0%	96%	8%	0%	93%
	n=48			n=40		

Table 6.7. Person Who Taught Respondent about Animal

Animal Name	Mother	Father	Grandmother	Grandfather	Other Relative	Friend/ Neighbor/ Other Person	DR/NR	Total
Wood Ants	0	2	2	0	0	0	0	4
Bobcat	1	2	0	0	0	0	0	2
Cicada	2	0	0	0	1	0	0	1
Cottontail	2	2	0	0	2	0	0	4
Coyote	2	0	0	0	0	0	0	0
Deer	6	8	1	1	3	0	0	13
Dove	2	2	0	0	0	0	0	2
Duck	1	0	0	0	1	0	0	1
Ground Squirrel	2	0	0	0	0	0	0	0
Hummingbird	1	0	2	0	0	0	0	2
Jackrabbit	6	4	3	2	3	0	0	12
Pine Jay	2	2	2	2	0	0	0	6
Redtail Hawk	0	0	0	0	2	0	0	2
Rock Wren	0	0	0	0	0	1	0	1
Squirrel	0	1	0	0	0	0	0	1
Total (Freq.)	27	23	10	5	12	1	0	78
Total (Percent)	35%	29%	13%	6%	15%	1%	0%	100%

Table 6.8. Person Whom Respondent Has Taught About Animal

Animal Name	Children	Grandchildren	Other Relative	Friends/ Neighbors	Total
Wood Ants	2	1	0	0	3
Bobcat	2	0	0	0	2

Conclusions

Indian people have many uses for the number of the animals that live on the NTS. This chapter, which summarizes the traditional and contemporary uses of animals identified by Indian people during the ethnobiology study on the NTS, should be considered a preliminary analysis. Animal interviews were not conducted as systematically as the interviewing for the archaeology and ethnobotany data collection efforts. Interviews were only conducted on animals that the respondents saw during the site visit. No attempt was made to interview representatives about animals known to live on the NTS, but not seen during the on-site visits.

The results of the mail survey indicated that 69 species of animals, birds, and insects are used by those Indian people who responded to the survey (see Chapter Seven). While not all of these 69 species live on the NTS, a number of them do. To completely document the importance of animals in the study area to Indian people, a systematic collection and analysis of data on Indian ethnozoology is required.

CHAPTER SEVEN

MAIL SURVEY RESULTS

A mail survey of tribal members was included in the program's design in order to allow the largest number of tribal members to participate in the study. This part of the program allows those tribal members who were not able to participate in the on-site visits to voice their concerns about cultural resources. All seventeen tribes that were involved in the compliance program were invited to participate in the mail survey. The nine tribes that chose to participate included: Timbisha Shoshone Tribe, Big Pine Indian Tribe, Fort Independence Indian Tribe, Lone Pine Indian Tribe, Pahrump Indian Tribe, Las Vegas Indian Center, Paiute Indian Tribe of Utah, Kaibab Paiute Tribe, and the Ely Shoshone Tribe. The questions that were included in the survey were designed to invoke general opinions about cultural resources and to gain recommendations towards protecting these resources on the NTS. The results of this survey reflect only the opinions of the participating tribal members.

This chapter is organized into three sections. The first section describes the methodology used in the design and implementation of the survey. The second section contains a discussion of the survey responses. The responses to each close-ended question were organized into tables and then cross-tabulated by the ethnic group of the respondent. The responses to each open-ended question were organized into response categories and are discussed in the text accompanying the tables. The final section contains a brief summary of the survey results.

Methodology

Writing the Survey

Previous interviews with tribal members and cultural experts identified certain types of cultural resources that were of primary importance to the survey. The survey included six sections corresponding to these different types of cultural resources. There was a section for each of the following types of resources: plants, animals, sacred places, artifacts, minerals, and water. The survey also included two other sections: a general section concerning the respondent's traditional lands and a section with questions regarding the respondent's personal history. The section concerning traditional lands was included in order to incorporate comments made by a tribal representative. These questions were constructed in order to gain some general opinions about the respondents' traditional lands. The section on personal history was included

so that a number of factors (gender, age, tribal group affiliation, and on-reservation or off-

[redacted]

Three kinds of questions were asked for each type of resource. These were designed to invoke responses regarding the importance (or unimportance) of the resource to the respondent and his or her family, the uses that the respondent and his or her family might have for the resource, and recommendations that the respondent might have for the protection of the resource on the NTS.

There are a variety of existing recommendations for the protection of plant resources, artifacts, and sacred places, which have resulted from previous studies (see Stoffle et al. 1990). Consequently, questions regarding the protection of these resources provide respondents with a number of existing recommendations on which they can express their opinion. These questions also included space for respondents to give a narrative response. On the other hand, there are very few existing recommendations regarding the protection of animal, mineral, and water resources from which to build questions. These kinds of resources were not included in the previous studies mentioned above. In order to obtain more recommendations, the questions regarding the protection of these resources were designed to elicit general, narrative responses.

Approving the Survey

A draft copy of the mail survey was mailed out on January 28, 1993 to DOE/NV and the tribal chairpeople for approval. After receiving comments on the first draft from the tribal chairpeople, DOE/NV, and DRI, a second and then a third version of the survey was sent out for approval on February 17 and 18, 1993, respectively.

which to draw a sample was much smaller then first anticipated. A sample from each list would have been very small. Therefore, surveys were sent out to every legible name on each list. This allowed the largest number of responses to be included in the analysis.

Two groups of surveys were sent out to nine tribes. The first group of 874 surveys was mailed out to the Ely Shoshone Tribe (195 surveys), Kaibab Paiute Tribe (135 surveys), Paiute Indian Tribe of Utah (342 surveys), Big Pine Indian Tribe (131 surveys), and the Lone Pine Indian Tribe (69 surveys) on February 25 and 26, 1993. The second group of 522 surveys was mailed out to the Timbisha Shoshone Tribe (104 surveys), Pahrump Paiute Tribe (23 surveys), Fort Independence Indian Tribe (41 surveys), and the Las Vegas Indian Center (348 surveys) on March 4, 1993. A total of 1,396 surveys were mailed out to the adult members of these nine tribes. As of May 30, 1993, no other lists of addresses had been received.

The mail survey was accompanied by a cover letter explaining the purpose of the survey. Most people who answer surveys do so immediately after they receive them. Surveys that were not answered after a week or more were therefore unlikely to be returned. In order to remind people that they had received the survey, a follow-up letter was mailed out on March 25 and 26, 1993. The follow-up letter was sent to those tribal members who had not sent back a completed survey. A few days after the follow-up letter was mailed we received another large batch of completed surveys. Although no second follow-up letter was sent, there is evidence that it might have also increased the response rate.

Recording the Surveys

Each survey was assigned a different number. This same number was written down next to the name of the person who was to receive the survey. The address lists served as checklists for returned surveys. When a completed survey was received, the same number on the checklist was circled.

The surveys sent out to a particular tribe corresponded to a particular set of survey numbers. For example, the surveys sent to the Kaibab Paiute Tribe corresponded to the set of numbers 001 to 135. The completed surveys were then numerically organized by tribe.

Some surveys were returned unopened because the address was incorrect, the forwarding order had expired, or some other related address problem. The address problem was written down next to the name of the person intended to receive the survey. There were 148 surveys that were returned unopened, in addition to 15 people who received surveys but who were not of Indian descent. When calculating the response rate, these surveys were subtracted from the total number of surveys mailed because they were never received by an *adult tribal member*. This reduced the total number of surveys included in the analysis to 1,233.

Response Rate

By June 30, 1993, 280 completed surveys had been received. Given the 1,233 adult tribal members who received the survey, there was a response rate of 22.7%.

Mail Survey Responses

The following discussion covers both the close-ended and open-ended questions included in the survey. The term close-ended question refers to those that contain categorical variables as choices for responses. For each of these variables, coding categories were assigned to the responses, along with any missing values. Responses were then cross-tabulated by the ethnic groups of the respondents (Southern Paiute, Western Shoshone, Owens Valley Paiute, and Other Indian). For each type of resource there were three kinds of questions. These questions address: 1) the importance of the resource to the respondents and their families; 2) the use of the resource by the respondents and their families on and off the NTS; and 3) the opinions of the respondents towards a number of ideas for protecting these resources.

Open-ended questions refer to those that elicited narrative responses. These questions were designed to elicit information concerning the feelings of Indian people towards traditional lands and lands associated with the NTS. They were also designed to gain a better understanding of the reasons Indian people want to visit sacred areas on the NTS as well as recommendations they might have for protecting the various resources on the test site. There was an additional question that elicited information concerning the kinds of animals and the birds the respondents are currently using.

The responses to the open-ended questions were organized into categories. These categories do not reflect complete responses but instead summarize common concepts (i.e. feelings, recommendations, or reasons) that were included in the responses. These concepts are the feelings, recommendations, or reasons that the respondents chose for their answers. Responses that included more then one concept were placed in all the appropriate categories. The sum of all responses to each question is therefore greater than the number of responses because some answers are included in more then one category. Once all the responses were categorized, a qualitative analysis of all these response categories was included in the discussion section. Owing to the qualitative nature of narrative responses, the percentages discussed represent the most frequent concepts included in the responses.

Personal History Section

Tables 7.1 and 7.2 contain information regarding the age, gender, and residential status of the respondents. Table 7.1 contains the responses to Questions 25 and 26. These were direct questions regarding the age and gender of the respondents. Table 7.2 contains the responses to Questions 28 and 29. Question 28 asked the respondents whether they live on or off a reservation. Question 29 elicited information about the number of years that the respondents have spent in their current residence.

Table 7.1. Gender and Age of the Respondents

ETHNIC GROUP	GENDER			AGE		
	Total # of respondents	# of males	# of females	avg age	min age	max age
Southern Paiute	116	47 (41%)	69 (59%)	40	18	77
Western Shoshone	68	20 (29%)	48 (71%)	44	18	78
Owens Valley Paiute	51	25 (49%)	26 (51%)	49	21	87
Other Indian	44	18 (41%)	26 (59%)	45	18	80
All Ethnic Groups	279	110 (39%)	169 (61%)	43	18	87

Table 7.2. Residential Status of the Respondents

ETHNIC GROUP	CURRENT RESIDENCE			
	# of respondents living on reservation	# of respondents living off reservation	Average # of years spent in current residence (on or off reservation)	
			on reservation	off reservation
Southern Paiute	44 (39%)	69 (61%)	29	22
Western Shoshone	22 (33%)	44 (67%)	28	23
Owens Valley Paiute	46 (92%)	4 (8%)	39	25
Other Indian	0 (0%)	42 (100%)	0	17
All Ethnic Groups	120 (44%)	151 (56%)	33	21

Personal History Responses

Although there was very little difference in the responses between the different ethnic groups, there was some demographic variation among the respondents themselves (Tables 7.1 & 7.2). Sixty-one percent of all the respondents (n=169) were women, and thirty-nine percent (n=110) were men. These numbers were almost exactly the same for the Southern Paiute respondents. Fifty-nine percent of the Southern Paiute respondents (n=69) were women, while

only forty-one percent (n=47) were men. Seventy-one percent of the Western Shoshone respondents (n=48) were women, while only twenty-nine percent (n=20) of the respondents were men. The Owens Valley respondents were much more evenly split along gender lines. Fifty-one percent (n=26) of these respondents were women, while forty-nine percent (n=25) were men. The Other Indian category also followed the general demographic pattern closely. Fifty-nine percent of the Other Indian respondents (n=26) were women, while forty-one percent were men.

The average respondent was not only female, but also in her forties. The Owens Valley respondents contained the highest average age of any of the ethnic groups (49), while the Southern Paiute respondents had the lowest average age (40).

More than half of the respondents (56%, n=151) indicated that they lived off-reservation, whereas forty-four percent of the respondents (n=120) indicated that they currently live on a reservation (Table 7.2). However, this was not true for each particular ethnic group. One-hundred percent of the Other Indian respondents live off-reservation. On the other hand, ninety percent of the Owens Valley respondents (n=46) live on a reservation. The residential status of the Southern Paiute and Western Shoshone respondents more closely resembled the overall percentages for all the respondents. Sixty-one percent of the Southern Paiute respondents live off-reservation (n=69), while sixty-five percent of the Western Shoshone respondents (n=44), live off-reservation. Those respondents who currently live on a reservation have spent, on average, a greater number of years living at their current residence then those respondents living off reservation. This was true for all the ethnic groups except Other Indian.

Access to Traditional Lands

Included in the general section of the mail survey was the question "Do you as an Indian person wish to visit or have access to traditional lands?" Table 7.3 presents the responses to this question organized by the ethnic group of the respondents. The open-ended questions included in this section were designed to gain a better understanding of how people feel about traditional

Table 7.3. Survey: Access to Traditional Lands

Ethnic Group	Yes	No	Total
Southern Paiute	112	3	115
Western Shoshone	65	2	67
Owens Valley Paiute	47	4	51
Other Indian	39	5	44
Total	263	14	277

Access to Traditional Lands Responses

Having access to traditional lands is important to Indian people (Table 7.3). The majority of respondents, or ninety-five percent (94.9%, n=263), indicated that they wished to visit or have access to traditional lands, while only five percent (5.1%, n=14) said that they did not wish to visit or have access to traditional lands.

The feelings of Indian people towards traditional lands were expressed in their responses to Question 1: "How do you as an Indian person feel about traditional lands?" The response rate to this question was eighty-eight percent (88.2%, n=247). The respondents overwhelmingly expressed their desire that traditional lands be left alone. This feeling is reflected in the concepts that were included in the responses. Twenty percent (20.2%, n=50) of the respondents who answered the question felt that traditional lands should be "left alone," while an additional twelve percent (12.5%, n=31) of the respondents who answered the question felt that traditional lands should be "protected or preserved." Fourteen percent (14.5%, n=36) of the respondents who answered the question explicitly mentioned that traditional lands were "sacred" to Indian people,

occurring on the NTS, most specifically testing, and many believed that they should be either moved from their current location or stopped altogether. Twenty-three percent (23%, n=62) of the respondents who answered the question either felt that lands found at the NTS should be left alone or that ground-disturbing activities associated with these lands should be stopped. Fourteen percent (14.4%, n=39) of the respondents who answered the question either did not like or were emotionally troubled by the ground-disturbing activities, while an additional eleven percent (11.8%, n=32) felt that ground-disturbing activities detrimentally affect the land and its resources. In addition, many of the Indian people responding to the survey expressed great concern that traditional lands and cultural resources, like burial grounds or hunting and gathering sites on the NTS should be protected. The Indian people who responded to the survey expressed some concern over both the physical and spiritual well-being of traditional lands. The following response is characteristic of the opinions expressed by the Indian respondents. "I don't like it. It hurts me to see how our Mother Earth is being torn up. I cry sometimes when I think about it or when I see it."

Plant Resources

Tables 7.4 through 7.17 contain the responses to the three questions concerning plant resources. The first question asks the respondent "How unimportant or important to you and

ritual/ceremony plants, and e) fuel plants. The forced-choice categories for each of these types of plants were 1) unimportant, 2) somewhat unimportant, 3) somewhat important, 4) very important, and 5) no opinion. Tables 7.4 through 7.8 contain the responses to the first question for all five categories of plants. The second question asks the respondent "Do you or any member of your family currently use:" followed by the five categories of plants. Tables 7.9

Table 7.5. Survey: Importance of Medicine Plants

Ethnic Group	unimportant	somewhat unimportant	somewhat important	very important	no opinion	Total
Southern Paiute	2	1	11	101	1	116
Western Shoshone	0	1	3	60	3	67
Owens Valley Paiute	1	0	6	44	0	51
Other Indian	1	0	4	37	2	44
Total	3	3	24	242	6	278
Total (percent)	1.1%	1.1%	8.6%	87%	2.2%	100%

Table 7.6. Survey: Importance of Food Plants

Ethnic Group	unimportant	somewhat unimportant	somewhat important	very important	no opinion	Total
Southern Paiute	2	2	14	97	1	116
Western Shoshone	0	1	5	58	3	67
Owens Valley Paiute	0	0	5	45	0	50
Other Indian	0	0	8	34	2	44
Total	2	3	32	234	6	277
Total (percent)	.7%	1.1%	11.5%	84.5%	2.2%	100%

Table 7.7. Survey: Importance of Ritual/Ceremony Plants

Ethnic Group	unimportant	somewhat unimportant	somewhat important	very important	no opinion	Total
Southern Paiute	2	3	8	100	3	116
Western Shoshone	0	3	6	54	4	67
Owens Valley Paiute	2	1	6	39	2	50
Other Indian	2	3	4	33	2	43
Total	6	10	24	226	11	277
Total (percent)	2.2%	3.6%	8.7%	81.5%	3.9%	99.9%

Table 7.8. Survey: Importance of Fuel Plants

Ethnic Group	unimportant	somewhat unimportant	somewhat important	very important	no opinion	Total
Southern Paiute	3	4	24	73	11	115
Western Shoshone	0	2	12	47	5	66
Owens Valley Paiute	1	2	6	39	2	50
Other Indian	2	3	9	23	5	42
Total	6	11	51	182	23	273
Total (percent)	2.2%	4%	18.7%	66.6%	8.4%	99.9%

Table 7.9. Survey: Current Use of Basket Plants

Ethnic Group	Yes	No	Total
Southern Paiute	79	36	115
Western Shoshone	47	18	66
Owens Valley Paiute	38	11	49
Other Indian	21	22	43
Total	185	87	272
Total (percent)	68%	32%	100%

Table 7.10. Survey: Current Use of Medicine Plants

Ethnic Group	Yes	No	Total
Southern Paiute	101	15	116

Table 7.11. Survey: Current Use of Food Plants

Ethnic Group	Yes	No	Total
Southern Paiute	86	27	113
Western Shoshone	51	14	65
Owens Valley Paiute	46	5	51
Other Indian	33	10	43
Total	216	56	272
Total (percent)	79.4%	20.6%	100%

Table 7.12. Survey: Current Use of Ritual/Ceremony Plants

Ethnic Group	Yes	No	Total
Southern Paiute	90	24	114
Western Shoshone	45	21	66
Owens Valley Paiute	42	9	51
Other Indian	25	18	43
Total	202	72	274
Total (percent)	73.7%	26.3%	100%

Table 7.13. Survey: Current Use of Fuel Plants

Ethnic Group	Yes	No	Total
Southern Paiute	62	47	109
Western Shoshone	46	20	66
Owens Valley Paiute	38	11	49
Other Indian	21	21	42
Total	167	99	266
Total (percent)	62.8%	37.2%	100%

Table 7.14. Survey: Responses to *Leave Plants in Place* Idea

Ethnic Group	bad idea	fair idea	good idea	no opinion	Total
Southern Paiute	12	13	83	3	111
Western Shoshone	9	8	43	1	61
Owens Valley Paiute	3	2	40	1	46
Other Indian	7	5	26	3	41
Total	31	28	192	8	259
Total (percent)	11.9%	10.9%	74.1%	3.1%	100%

Table 7.15. Survey: Responses to *Protect Similar Plants Elsewhere* Idea

Ethnic Group	bad idea	fair idea	good idea	no opinion	Total
Southern Paiute	6	19	80	2	107
Western Shoshone	12	4	46	2	64
Owens Valley Paiute	3	9	36	1	48
Other Indian	2	9	27	3	41
Total	23	41	189	8	261
Total (percent)	8.8%	15.7%	72.4%	3.1%	100%

Table 7.16. Survey: Responses to *Transplant to a Similar Environment* Idea

Ethnic Group	bad idea	fair idea	good idea	no opinion	Total

respondents (85.1%, n=233) said fuel plants were important while only six percent (6.2%, n=17) said they were unimportant.

All the plants mentioned in the survey were used by a majority of the respondents (Tables 7.9-7.13). Eighty-four of the respondents (84.5%, n=234) indicated that they currently use medicine plants while seventy-nine percent (79.4%, n=216) said that they currently use food plants. Fuel plants were used by the smallest percentage of respondents, sixty-two percent (62.8%, n=167), although this was still the majority.

The vast majority of respondents supported the first two recommendations for protecting plant resources: "leave in place" and "protect similar plants elsewhere." Seventy-four percent of the respondents (74.1%, n=192) thought "leave in place" was a "good idea" for protecting plants although eleven percent (11.9%, n=31) thought it was a "bad idea." Seventy-two percent of the respondents (72.4%, n=189) said that "protect similar plants elsewhere" was a "good idea." An additional fifteen percent (15.7%, n=41) indicated that they thought it was at least a "fair idea" while eight percent (8.8%, n=23) thought it was a "bad idea." The responses to the other two recommendations were more divided. A significant percentage (40.7%, n=105) of respondents said that the third recommendation, "transplant to a similar environment," was a "good idea." However, thirty-four percent (34.5%, n=89) of the respondents indicated that they thought this was a "bad idea" while twenty-one percent (20.9%, n=54) said it was a "fair idea." The majority of respondents (54.7%, n=143) said that they thought the fourth recommendation, "collect seeds, replant later," was a "good idea." However, twenty-two percent (22.6%, n=59) also thought it was a "bad idea" while twenty percent said it was a "fair idea."

Thirty-nine percent (39.2%, n=110) of the total number of respondents responded to the open-ended component of Question 6. This component of the question elicited "other recommendations" for protecting plants on the NTS. The most common recommendation with regards to protecting plant resources on the NTS was that plants be "left alone." Like the responses of the other open-ended question, many respondents replied by saying "stop testing." There were a few respondents who believed that the test site should be moved from its present location. A number of respondents believed that transplanting plants and seeds was a bad idea because the success rate was questionable. However, there was an equal number of people who believed that this is a good idea. There were also numerous other recommendations including involving Native Americans in the decision-making processes, establishing plant sanctuaries outside of the NTS, and closing down the test site all together. The responses reflected a widespread concern for the plants as well as the environment on the NTS. Many respondents indicated their awareness that leaving plants alone also meant leaving the land and other natural and cultural resources alone. As one respondent asserted, "part of the reason they are sacred is because they are part of Mother Earth."

Animal Resources

Tables 7.18 and 7.19 provide the responses to questions concerning both animal and bird resources. Table 7.18 reflects the importance or unimportance of these resources to those people

who responded to the survey. Table 7.19 reflects the number of respondents who currently make use of these resources. Responses are cross-tabulated by ethnic group.

An open-ended question was included in the survey to elicit information regarding the kinds of animals and birds the respondents are using. Table 7.20 contains both a list of the animals and birds mentioned by the respondents as well as the frequency with which they were mentioned. Recommendations for protecting animal resources were elicited in another open-ended question. These responses are discussed in the accompanying text.

Table 7.18. Survey: Importance of Wild Animals and Birds

Ethnic Group	unimportant	somewhat unimportant	somewhat important	very important	no opinion	Total
Southern Paiute	1	0	16	98	1	116
Western Shoshone	0	2	7	58	0	58
Owens Valley Paiute	0	0	3	47	1	51
Other Indian	0	1	4	39	0	44
Total	1	3	30	242	2	278
Total (percent)	.4%	1.1%	10.8%	87%	.7%	100%

Table 7.19. Survey: Current Use of Wild Animals and Birds

Ethnic Group	Yes	No	Total
Southern Paiute	99	17	116
Western Shoshone	54	11	65
Owens Valley Paiute	38	13	51
Other Indian	28	15	43
Total	219	56	275
Total (percent)	79.6%	20.4%	100%

Table 7.20. Animals and Birds Currently Used by Frequency Mentioned

Animal/Bird	# of respondents who mentioned it	% of respondents who answered question
Deer	155	70.7%
Rabbit	102	47.2%
Eagle	51	23.2%
Quail	43	19.9%
Elk	37	16.8%
Dove	36	16.6%
Bird (general)	31	14.3%
Duck	24	11.1%
Hawk	23	10.5%
Squirrel	18	8.3%
Fish	17	7.8%
Chukars	16	7.4%
Cottontail	16	7.4%
Pheasant	16	7.4%
Sage Hen	12	5.5%
Coyote	12	5.5%
Antelope	11	5%
Geese	10	4.6%
Porcupine	10	4.6%
Sheep	9	4.1%
Groundhog	6	2.7%
Turkey	5	2.3%
Turtles	5	2.3%
Chuckawalla	5	2.3%
Trout	4	1.8%
Blue Jays	4	1.8%
Woodchuck	3	1.3%
Canadian Geese	3	1.3%

Table 7.20 continued

Animal/Bird	# of respondents	% of respondents
Snakes	3	1.3%
Chickens	2	.9%
Bear	2	.9%
Buffalo	2	.9%
Chipmunk	2	.9%
Gray Squirrel	2	.9%
Hummingbird	2	.9%
Lizard	2	.9%
Magpie	2	.9%
Mountain Lion	2	.9%
Owl	2	.9%
Robin	2	.9%
Pine Jay	2	.9%
Water Bird/Fowl	2	.9%
Catfish	1	.5%
Bass	1	.5%
Bison	1	.5%
Blue Grouse	1	.5%
Bobcat	1	.5%
Brine Shrimp	1	.5%
Caterpillar	1	.5%
Crows	1	.5%
Fawn	1	.5%
Frog	1	.5%
Opossum	1	.5%
Partridge	1	.5%
Pigeon	1	.5%
Praying Mantis	1	.5%
Road Runner	1	.5%
Rockchuck	1	.5%
Skunk	1	.5%
Sparrow	1	.5%
Tarantula	1	.5%
Weasel	1	.5%
Wild Mustang	1	.5%

Animal Resource Responses

Animals, including birds, are very important to the Indian people who participated in the mail survey (Table 7.18). Eighty-seven percent (87%, n=242) of the respondents said that animal resources were "very important" and another ten percent (10.8%, n=30) said that they were "somewhat important." Only one and a half percent of the respondents (1.5%, n=4)

[redacted]

seventy-nine percent (79.6%, n=219) of those people responding to the survey indicated that

[redacted]

What recommendations do you have to protect wild animals including birds found at the Nevada Test Site?" The response rate for this question was eighty percent (80%, n=224). The most common recommendation for protecting animal resources on the NTS was stopping ground-disturbing activities. Thirty-one percent (31.7%, n=71) of the Indian people who answered the question recommended that ground-disturbing activities, including nuclear testing, be stopped while an additional thirteen percent (13.5%, n=30) recommended that the test site be shut down or moved from its current location. Fifteen percent of the respondents suggested relocation to a safer or similar environment outside of the NTS as a way of protecting animals and birds on the NTS. Thirteen percent (13.3%, n=30) of the respondents simply recommended that the animals and birds contained within the test site's boundaries be "left alone." A number of respondents also indicated that protecting animals and birds requires the protection of their habitats as well as the land in general. There were several other recommendations mentioned in the responses including 1) creating a nature preserve for the animals, birds and their habitats, and 2) monitoring the animals and birds for contamination. The respondents clearly felt that animals and birds "should get higher consideration."

Sacred Places (Burials, Shrines, Religious Areas)

The following nine tables and the discussion of the responses that follows the tables provide the responses to the four questions that concern places that are sacred to Indian people. Table 7.21 indicates the importance or unimportance of sacred places to those Indian people responding to the survey. Table 7.22 indicates whether the respondents currently visit sacred places and table 7.23 determines whether the respondents wish to visit sacred places found at the NTS. Question 14 asked the respondents to give reasons for why (or why not) they wish to visit sacred places on the NTS. The responses to this question are included in the accompanying text. Tables 7.24 through 7.29 contain a number of ideas for protecting sacred places that might be impacted by ground-disturbing activities at the NTS. The respondents are then asked to rate each of these ideas as either "bad," "fair," or "good."

Table 7.21. Survey: Importance of Sacred Places

Ethnic Group	unimportant	somewhat unimportant	somewhat important	very important	no opinion	Total
Southern Paiute	0	3	7	105	1	116
Western Shoshone	1	0	3	61	2	67
Owens Valley Paiute	1	0	2	46	1	50
Other Indian	3	0	7	34	0	44
Total	5	3	19	246	4	277
Total (percent)	1.8%	1.1%	6.8%	88.8%	1.4%	99.9%

Table 7.22. Survey: Current Visits to Sacred Places

Ethnic Group	Yes	No	Total
Southern Paiute	89	27	116
Western Shoshone	48	19	67
Owens Valley Paiute	43	8	51
Other Indian	30	13	43
Total	210	67	277
Total (percent)	75.8%	24.2%	100%

Table 7.23. Survey: Access to Sacred Places on NTS

Ethnic Group	Yes	No	Total
Southern Paiute	88	24	112
Western Shoshone	51	14	65
Owens Valley Paiute	41	8	49
Other Indian	34	10	44
Total	214	56	270
Total (percent)	79.2%	20.8%	100%

Table 7.24. Survey: Responses to *Conduct Ceremonies before Ground Disturbing Activity* Idea

Ethnic Group	bad idea	fair idea	good idea	no opinion	Total
Southern Paiute	34	20	46	5	105
Western Shoshone	26	9	20	7	62
Owens Valley Paiute	18	5	17	4	44
Other Indian	15	5	11	10	41
Total	93	39	94	26	252
Total (percent)	36.9%	15.4%	37.3%	10.3%	99.9%

Table 7.25. Survey: Responses to *Leave Sacred Sites in Place* Idea

Ethnic Group	bad idea	fair idea	good idea	no opinion	Total
Southern Paiute	7	13	89	3	112
Western Shoshone	4	5	50	4	63
Owens Valley Paiute	1	3	41	1	46
Other Indian	4	4	28	5	41
Total	16	25	208	13	262
Total (percent)	6.1%	9.5%	79.3%	5%	99.9%

Table 7.26. Survey: Responses to *Make Sacred Areas Off Limits* Idea

Ethnic Group	bad idea	fair idea	good idea	no opinion	Total
Southern Paiute	11	5	94	2	112
Western Shoshone	6	4	50	1	61
Owens Valley Paiute	3	5	36	1	45
Other Indian	4	0	34	2	40
Total	24	14	214	6	258
Total (percent)	9.3%	5.4%	83%	2.3%	100%

Table 7.27. Survey: Responses to *Remove Sacred Items/Curate in a Scientific Museum* Idea

Ethnic Group	bad idea	fair idea	good idea	no opinion	Total
Southern Paiute	78	18	10	4	110
Western Shoshone	56	2	2	3	63
Owens Valley Paiute	29	10	4	0	43
Other Indian	29	5	4	2	40
Total	192	35	20	9	256
Total (percent)	75%	13.7%	7.8%	3.5%	100%

Table 7.28. Survey: Responses to *Remove Sacred Items/Curate in a Tribal Museum/Cultural Center* Idea

Ethnic Group	bad idea	fair idea	good idea	no opinion	Total
Southern Paiute	50	30	23	5	108
Western Shoshone	35	12	18	2	67
Owens Valley Paiute	19	8	14	3	44
Other Indian	15	15	12	0	42
Total	119	65	67	10	261
Total (percent)	45.6%	24.9%	25.6%	3.8%	99.9%

Table 7.29. Survey: Responses to *Remove Sacred Items/Return to Appropriate Tribe* Idea

Ethnic Group	bad idea	fair idea	good idea	no opinion	Total
Southern Paiute	35	20	47	6	108
Western Shoshone	31	9	21	2	63
Owens Valley Paiute	17	12	14	1	44
Other Indian	17	8	14	3	42
Total	100	49	96	12	257
Total (percent)	38.9%	19%	37.4%	4.7%	100%

Sacred Places Responses

The vast majority of respondents indicated that sacred places were important to them (Table 7.21). Eighty-eight percent (88.8%, n=246) of the respondents indicated that sacred places were "very important" while an additional seven percent (6.8%, n=19) indicated that the sacred areas were "somewhat important." Only three percent (2.9%, n=8) of the respondents considered sacred places as either "unimportant" or "somewhat unimportant." The vast majority of respondents also visit sacred places (Tables 7.22 & 7.23). Seventy-five percent (75.8%, n=210) of the respondents indicated that they currently visit sacred places while seventy-nine percent (79.2%, n=214) indicated that they wished to visit sacred places at the NTS.

Ninety-two percent (92.1%, n=258) of the total number of respondents responded to Question 14: "What are your reasons for your answer to Question #13". Thirty-two percent (32.1%, n=68) of the respondents who answered "yes" to Question 13 indicated that they wished to visit sacred places on the NTS because it was important to the history and culture of Indian people. The importance of sacred places in the cultural, religious, and spiritual life of Indian people is reflected in the following response, "[Sacred places] are of value to our family towards the education of our children--instilling pride in their heritage." Six percent (6.6%, n=14) of the respondents specifically mentioned that it was important to pass on the information of sacred places to future generations. Thirteen percent (13.7%, n=29) of the respondents who answered "yes" to Question 13 wanted to visit sacred places on the NTS because of explicitly stated religious, ceremonial, or spiritual reasons. Nine percent (9.4%, n=20) of the respondents wanted to visit because they were either curious or unfamiliar with sacred places on the NTS. Eight percent (8%, n=17) of the respondents wanted to visit sacred places on the NTS to see how much damage had been caused by ground-disturbing activities. Other reasons include: 1) to honor their ancestors; 2) because they have family buried on lands within the test site; 3) for medicinal reasons; 4) because they visit sacred areas regularly; 5) because there are few sacred areas left; 6) to feel the power of sacred places; and 7) because they are part of the land.

Twenty-one percent (21.7%, n=10) of the respondents who answered "no" to Question 13 indicated that they did not want to visit sacred places on the NTS because they were afraid of disease and radiation. As one respondent commented, with regards to visiting sacred places on the NTS, it "depends on the contamination of the area within sacred grounds." An additional twenty-one percent of the respondents (n=10) who answered "no" to Question 13 were simply not interested or had no reason to visit sacred places on the NTS. However, as discussed above, the overwhelming majority of respondents (79%) wished to visit sacred places found at the NTS. There were a few respondents who did not wish to visit sacred places on the NTS because they felt they would become emotionally troubled if they were to see sacred places that had been disturbed. The responses reflect the fact that sacred places are, as one respondent stated, "a personal part of my identity as an Indian."

The respondent's recommendations for protecting sacred places at the NTS were elicited in Question 15 (Tables 7.24-7.29). The responses were somewhat divided for the first recommendation, "conduct ceremonies before ground-disturbing activity." Thirty-seven percent of the respondents (36.9%, n=93) indicated that they thought this was a "bad idea" and thirty-seven percent of the respondents (37.3%, n=94) indicated that they thought this was a "good idea." The second recommendation, "leave in place", received the support of the majority of respondents. Seventy-nine percent (79.3%, n=208) of the respondents indicated that they thought this was a "good idea" while only six percent of the respondents (6.1%, n=16) said that they thought this was a "bad idea." There was even more support for the third recommendation, "make area off limits." Eighty-three percent of the respondents (83%, n=214) said that they thought this was a "good idea" while only nine percent of the respondents thought its was a "bad idea." The fourth recommendation, "remove sacred items and place in a scientific museum", received very little support from the respondents. Seventy-five percent of the respondents (75%, n=192) indicated that they thought this was a "bad idea" while only seven percent (7.8%, n=20) thought this was a "good idea." Although the responses to the fifth recommendation, "remove sacred items and place in a tribal museum or cultural center," were somewhat split, many of the respondents thought this was a "bad idea." Forty-five percent of the respondents (45.6%, n=119) indicated that this was a "bad idea," twenty-four percent (24.9%, n=65) thought it was a "fair idea," and twenty-six percent (25.6%, n=67) indicated that they thought it was a "good idea." Responses to the last recommendation, "remove sacred items and return to appropriate tribe," were even more evenly split. Thirty-eight percent of the respondents (38.6%, n=100) indicated that they thought this was a bad idea, nineteen percent (19.3%, n=49) thought it was a "fair idea," while thirty-seven percent (37.4%, n=96) said that it was a "good idea."

Forty-eight percent (48.5%, n=136) of the total number of respondents responded to the open-ended component of Question 15. This component of the question elicited "other recommendations" for protecting sacred places on the NTS. The most common recommendation was that sacred areas be "left alone" and that items associated with sacred areas such as funerary objects not be moved. This was especially true for burial sites. Several respondents indicated that the ideas mentioned for protecting cultural resources were choices that they would make only if ground-disturbing activities were going to continue. Many of the respondents felt that sacred

areas and materials associated with sacred areas should be left alone and in place and would only recommend removal of the latter if ground-disturbing activities were going to continue. Other recommendations included stopping testing, returning sacred areas and items back to the appropriate tribe, or moving or shutting down the NTS. These are clearly "holistic conservation" responses (Stoffle and Evans 1990). The Indian people who responded to the survey expressed some other concerns regarding the protection of sacred places on the NTS. These concerns were often expressed as second-choice alternatives to the recommendations just mentioned. There were several respondents who requested that the affected Indian tribe be intimately involved in the decision-making and monitoring processes. A number of respondents requested that ceremonies be conducted or elders be consulted when any sacred areas or items are moved. There were also a few respondents who were concerned that if sacred items were left on the NTS they would be stolen. Many respondents were also not sure if ground-disturbing activities would continue if sacred areas and items were left in place. Ideally, the respondents felt that sacred areas should be left alone.

Artifacts

The following seven tables contain the responses to questions concerning Native American artifacts. Table 7.30 reflects the importance or unimportance of these artifacts to the Indian people who responded to the survey. Table 7.31 indicates the number of the respondents who currently visit sites containing Native American artifacts. Tables 7.32 through 7.36 present a series of ideas for protecting Native American artifacts on the NTS which the respondents rated as either "bad," "fair," or "good."

Table 7.30. Survey: Importance of Native American Artifacts

Ethnic Group	unimportant	somewhat unimportant	somewhat important	very important	no opinion	Total
Southern Paiute	2	0	15	97	2	116
Western Shoshone	1	0	6	60	0	67
Owens Valley Paiute	1	0	4	44	1	50
Other Indian	0	1	5	38	0	44
Total	4	1	30	239	3	277
Total (percent)	1.4%	.4%	10.8%	86.3%	1.1%	100%

Table 7.31. Survey: Currently Visiting Sites Containing Native Americas Artifacts

Ethnic Group	Yes	No	Total
Southern Paiute	90	22	112
Western Shoshone	52	14	66
Owens Valley Paiute	42	8	50
Other Indian	36	7	43
Total	220	51	271
Total (percent)	81.2%	18.8%	100%

Table 7.32. Survey: Responses to *Leave Artifacts in Place* Idea

Ethnic Group	bad idea	fair idea	good idea	no opinion	Total
Southern Paiute	12	17	78	5	112
Western Shoshone	13	4	43	2	62
Owens Valley Paiute	6	2	38	0	46
Other Indian	6	5	26	1	38
Total	37	28	185	8	258
Total (percent)	14.3%	10.9%	71.7%	3.1%	100%

Table 7.33. Survey: Responses to *Make Area with Artifacts Off-Limits* Idea

Ethnic Group	bad idea	fair idea	good idea	no opinion	Total
Southern Paiute	10	9	91	2	112
Western Shoshone	7	4	49	1	61
Owens Valley Paiute	3	7	31	0	41
Other Indian	4	7	30	1	42
Total	24	27	201	4	256
Total (percent)	9.4%	10.5%	78.5%	1.6%	100%

Table 7.34. Survey: Responses to *Remove Artifacts/Curate in a Scientific Museum* Idea

Ethnic Group	bad idea	fair idea	good idea	no opinion	Total
Southern Paiute	73	23	6	5	107
Western Shoshone	51	4	3	3	61
Owens Valley Paiute	29	11	2	0	42
Other Indian	28	6	3	1	38
Total	181	44	14	9	248
Total (percent)	73%	17.7%	5.6%	3.6%	99.9%

Table 7.35. Survey: Responses to *Remove Artifacts/Curate in Tribal Museum/Cultural Center* Idea

Ethnic Group	bad idea	fair idea	good idea	no opinion	Total
Southern Paiute	44	31	28	5	108
Western Shoshone	30	11	21	3	65
Owens Valley Paiute	14	10	17	2	43
Other Indian	11	14	14	1	40
Total	99	66	80	11	256
Total (percent)	38.7%	25.8%	31.2%	4.3%	100%

Table 7.36. Survey: Responses to *Remove Artifacts/Return to Appropriate Tribe* Idea

Ethnic Group	bad idea	fair idea	good idea	no opinion	Total
Southern Paiute	32	25	41	8	106
Western Shoshone	27	7	23	5	62
Owens Valley Paiute	15	14	14	0	43
Other Indian	13	10	15	2	40
Total	87	56	93	15	251
Total (percent)	34.7%	22.3%	37%	6%	100%

Artifact Responses

The overwhelming majority of respondents, eighty-six percent (86.3%, n=239), indicated that Native American artifacts were "very important" to them and their families. An additional ten percent (10.8%, n=30) indicated that artifacts were "somewhat important." Only one percent of the respondents (1.8%, n=5) indicated that artifacts were either "somewhat unimportant" or "unimportant." The responses contained in table 7.31 also indicate that the majority of respondents, eighty-one percent (81.2%, n=220), also currently visit sites containing Native American artifacts. However, nineteen percent of the respondents (18.8%, n= 51) indicated that they did not currently visit sites containing Native American artifacts.

Each of the last five tables (Tables 7.32-6.36) contains an idea for protecting Native American artifacts on the NTS. The respondents expressed their strongest support for the first two recommendations. Seventy-one percent of the respondents (71.7%, n=185) indicated that the first recommendation, "leave artifacts in place", was a "good idea." There was even stronger support for the second recommendation, "make area off limits." Seventy-eight percent of the respondents (78.5%, n=201) indicated that they thought this was a "good idea." The third recommendation, "remove artifacts and place in a scientific museum", was considered to be a "bad idea" by seventy-three percent of the respondents (73%, n=201). Nevertheless, seventeen percent of the respondents (17.7%, n=44) indicated that this was still a "fair idea." The responses to the fourth recommendation, "remove artifacts and place in a tribal museum or cultural center", were more divided than the responses to the other recommendations. The largest number of respondents, thirty-eight percent (38.7%, n=99), indicated that they thought this was a "bad idea." Thirty-one percent (31.2%, n=80) indicated it was a "good idea" and twenty-five percent (25.8%, n=66) said it was a "fair idea." The responses to the fifth recommendation, "remove artifacts and return to appropriate tribe," were even more split. Thirty-seven percent of the respondents (37%, n=93) indicated that this was a "good idea," thirty-four percent (34.7%, n=87) said it was a "bad idea," and twenty-two percent (22.3%, n=56) thought it was a "fair idea."

Thirty-five percent (35%, n=98) of the total number of respondents responded to the open-ended component of Question 18. This component of the question elicited "other recommendations" regarding the protection of artifacts on the NTS. The responses reflected the same concerns that Indian people had for most of the other resources. The majority of the respondents felt that artifacts found on the NTS should be left alone. The most common recommendation was to stop testing. A few respondents also recommended either moving the test site or simply shutting it down. There was also a significant number of respondents who were concerned that these resources not be moved from their location on the NTS. Many of the respondents believed that the artifacts should remain in place for future generations. A number of respondents repeated the recommendations "remove and return to tribe" and "make off limits" that were included as choices in the close-ended part of the question (see preceding paragraph). One respondent requested that artifacts not be moved until spiritual leaders could do the necessary ceremonies.

Mineral Resources

Tables 7.37 and 7.38 contain the respondents' opinions towards clay or rock quarries. Table 7.37 reflects the importance or unimportance of clay or rock quarries to the respondents and their families. Table 7.38 indicates the number of respondents who currently use clay or rocks from quarries. An open-ended question was also included in this section to invoke responses regarding the protection of mineral resources on the NTS. These recommendations are discussed in the accompanying text.

Table 7.37. Survey: Importance of Clay and Rock Quarries

Ethnic Group	unimportant	somewhat unimportant	somewhat important	very important	no opinion	Total
Southern Paiute	4	4	36	61	10	115
Western Shoshone	8	5	14	34	6	67
Owens Valley Paiute	3	1	14	28	5	51
Other Indian	8	4	13	16	3	44
Total	23	14	77	139	24	277
Total (percent)	8.3%	5.1%	27.8%	50.2%	8.6%	100%

Table 7.38. Survey: Current Use of Clay and Rock Quarries

Ethnic Group	Yes	No	Total
Southern Paiute	52	62	114
Western Shoshone	28	36	64
Owens Valley Paiute	23	26	49
Other Indian	16	27	43
Total	119	151	270
Total (percent)	44.1%	55.9%	100%

Mineral Resource Responses

The importance of mineral resources to the respondents is reflected in Table 7.37. Seventy-eight percent (77.8%, n=216) of the respondents indicated that they thought clay or rock quarries were in some degree important to them. Fifty percent of the respondents (50.2%, n=139) said that they thought clay or rock quarries were "very important" while an additional twenty-seven percent (27.8%, n=77) indicated that they were "somewhat important." The majority of respondents (55.9%, n=151) indicated that they do not currently use clay or rocks from quarries although a significant number of respondents (44.1%, n=119) also indicated that they currently use these resources.

The respondent's recommendations for protecting mineral resources on the NTS were elicited in Question 21: "Sometimes clay or rock quarries on the Nevada Test Site are affected by ground-disturbing activities. What recommendations do you have to protect clay or rock quarries found at the Nevada Test Site?" The response rate for this question was seventy-one percent (71.4%, n=200). The Indian people responding to this question overwhelmingly expressed the opinion that both clay and rock quarries be left alone. The most common recommendation to protect these quarries was to stop testing. Twenty-seven percent (27.5%, n=55) of the respondents recommended that all ground-disturbing activities, including nuclear testing, be stopped while twenty-three percent (23.5%, n=47) of the respondents recommended that the quarries simply be "left alone." An additional ten percent (10.1%, n=20) of the respondents recommended that the NTS be either moved or shut down. Six percent (6.5%,

Water Resources

Tables 7.39 and 7.40 contain the responses concerning springs. Table 7.39 reflects the importance or unimportance of these springs to the respondents and their families. Table 7.40 indicates the number of respondents who currently use springs. Recommendations for protecting water resources on the NTS are also discussed in the accompanying text.

Table 7.39. Survey: Importance of Water Resources

Ethnic Group	unimportant	somewhat unimportant	somewhat important	very important	no opinion	Total
Southern Paiute	0	2	14	99	1	116
Western Shoshone	1	2	4	57	3	67
Owens Valley Paiute	0	0	4	46	0	50
Other Indian	0	2	6	36	0	44
Total	1	6	28	238	4	277
Total (percent)	.4%	2.2%	10.1%	85.9%	1.4%	100%

Table 7.40. Survey: Current Use of Springs

Ethnic Group	Yes	No	Total
Southern Paiute	80	34	114
Western Shoshone	50	16	66
Owens Valley Paiute	36	14	50
Other Indian	29	14	43
Total	195	78	273
Total (percent)	71.4%	28.6%	100%

Water Resource Responses

The majority of respondents indicated that springs were very important to them (Table 7.39). Eighty-six percent of the respondents (85.9%, n=238) said that springs were "very important," while an additional ten percent (10.2%, n=28) indicated that springs were "somewhat important." The majority of respondents, or seventy-one percent (71.4%, n=195), also indicated that they currently use springs. Less than three percent of the respondents (2.6%, n=7) said that springs were, at least in some degree, unimportant to them.

Eighty percent (80.4%, n=225) of the total number of respondents responded to Question 24: "Sometimes springs on the Nevada Test Site are affected by ground-disturbing activities. What recommendations do you have to protect springs found at the Nevada Test Site?" Springs are essential to the life of animals and birds as well as the spiritual and physical well-being of Indian people. The responses indicate a strong concern over the damage caused to springs on and adjacent to the NTS by ground-disturbing activities. The following response reflected the prevailing attitude towards springs on the NTS: "They should be protected. Every consideration should be taken to ensure that water resources and especially desert springs are protected for wildlife as well as traditional Native American uses." There was also serious concern among the respondents over the level of contamination that has already occurred to these springs and that will occur with continued ground-disturbing activities. Many of the respondents were uncertain whether springs on the NTS are safe for human or animal consumption. The most common recommendation for protecting springs, one expressed by twenty-six percent (26.7%, n=60) of the respondents who answered the question, was to "stop testing." One characteristic respondent believed that ground-disturbing activities should be reduced and testing stopped because these will "dry the springs and ceremonial areas will be destroyed." An additional twelve percent

(12.8%, n=29) recommended that the test site be moved or shut down. Twenty-five percent (24.9%, n=46) recommended that the springs on the NTS be "left alone" or "undisturbed." However, twelve percent (11.9%, n=27) of the respondents felt that springs on the NTS were irreversibly contaminated and believed further attempts at mitigating these problems were useless. Other recommendations included: making the springs off-limits, preserving the springs, keeping ground-disturbing activities away from the springs, rerouting the water away from the contamination so it can be utilized, fencing off the springs, and checking the springs for contamination and cleaning them if necessary.

All five types of traditional plant resources are important to Indian people, although medicinal and food plants are felt to be the most important and used by the largest number of respondents. The Indian people responding to the survey preferred leaving plants in place or protecting similar plants elsewhere as ideas for protecting plant resources. A few respondents recommended establishing plant sanctuaries outside of the NTS.

Animals and birds are both important and currently used by the majority of Indian respondents. Deer and rabbits were the two most common animals that were mentioned. Eagles, quails, and doves were the most common birds mentioned. However, 63 other types of animals and birds were mentioned by the respondents (see Table 7.20). Apart from the common recommendations mentioned above, several respondents recommended creating a nature preserve for the animals, birds, and their habitats.

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of them indicated that they currently use these resources. However, the majority of Indian people responding to the survey use water from springs. The responses regarding water resources indicate an exceedingly strong desire on the part of the respondents that such resources be protected on the NTS for the use of both animals and humans. However, some of the respondents were also concerned that water on the NTS could be highly contaminated. There were even a few respondents who mentioned specific instances of groundwater contamination.

Sacred places, artifacts, minerals, and water resources are all important to Indian people. The majority of Indian respondents currently visit sacred places and wish to visit sacred places on the NTS. The majority of respondents also indicated that they currently visit sites containing Native American artifacts. Sacred places and artifacts are highly valued by Indian people and therefore special care should be taken in their maintenance and protection. The Indian respondents clearly indicated their concern that these resources be preserved and protected for

CHAPTER EIGHT

MITIGATION RECOMMENDATIONS

Future Methodological Advances for Cultural Resource Site Protection

It must be noted that Indian plants, archaeological materials and the presence of culturally significant animals and their habitat, should ideally be part of site evaluation and protection. There is not, as yet, a formula for calculating the cultural significance of either archaeological sites or animals, although our research team has begun to examine the variables that should be included in calculating the cultural significance of these Indian cultural resources. More systematic ethnofauna studies need to be conducted (see Chapter Six for a preliminary analysis of animals). Quantitative, weighted triage cultural resource significance calculations have been shown to result in policy-relevant recommendations for protection actions.

In addition, sacred sites, or Traditional Cultural Properties (TCPs) identified by tribal representatives may or may not have archaeological, botanical, or animal resources in any abundance. In fact, such areas may be totally devoid of such cultural features, yet be considered to be highly significant and sensitive areas by the Indian people. Consequently, weighted triage procedures are not relevant to TCPs. TCPs are evaluated according to intangible cultural values and the integral role such sites, or locations of significant cultural and historic events, play in belief systems and lifeways (Parker and King 1990).

Seven sacred site interviews were conducted as part of the ethnobiology on-site visits, but the data have not been systematically analyzed. Likely areas for TCP status have been identified, but further systematic analysis is needed. TCP studies are very new, and a field study to identify TCPs on the NTS is being proposed for the next phase of the NTS AIRFA compliance program study effort. Future studies are needed to integrate archaeological, animal, and sacred place significance into the methodology for protecting Indian cultural resources on the NTS. These studies have been recommended by tribal leaders and representatives as part of the continuing consultation relationship with DOE/NV.

This chapter presents mitigation recommendations made by the representatives of the seventeen tribes involved in the NTS AIRFA compliance program. These tribes offer the

Rainier Mesas study area. The recommendations come from three sources, (1) on-site interviews, (2) mail survey responses, and (3) mitigation meetings. The foundation of all mitigation recommendations is the ethnoarchaeology and ethnobotany on-site visits and interviews with tribal representatives. These recommendations are summarized in the first portion of this chapter. The mail survey responses expressed concern for various cultural resources and suggested ways these could be protected. The on-site and mail survey

On-Site Recommendations

Archaeological Sites and Resources

During the ethnoarchaeology on-site visit interviews, tribal representatives were asked the questions, "Is this site being affected by DOE/NV activities?" and "Will this site be affected by DOE/NV activities in the future?" The questions were asked in order to elicit tribal representatives' thoughts on whether they perceived any effect of current DOE/NV activities on sites, and whether they felt future DOE/NV activities would potentially affect the sites.

Current Impact

Virtually all sites visited in the Pahute and Rainier Mesas study area are located either near roads, drill pads, repeater stations, tunnels, shafts, closed crater areas, or areas undergoing current investigation and construction for potential future underground tests. Access to all sites involves some amount of off-road walking or hiking, but access to several sites involves more hiking than to others. Given vehicular traffic and foot travel by crews engaged in various activities in the study area, as well as extant infrastructure and physical evidence of planned future infrastructure, it is not surprising that most tribal representatives felt that archaeological sites are currently being affected by these activities. Table 8.1 shows the response pattern to the question, "Is this site being affected by DOE/NV activities?"

Table 8.1 illustrates that for all of the sites visited, nearly three-quarters (72%) of the representatives responded that they perceive that the sites are currently being affected by DOE/NV activities. Only 28% of the representatives responded that sites currently were not affected by DOE/NV activities. When looked at from a site-by-site perspective, all sites except site 3B are perceived by a majority of representatives to be currently affected by DOE/NV activities.

Tribal representatives were asked to rank the overall significance of sites on a three-point scale (see Chapter Six). Table 8.2 shows the tribal responses cross-tabulated by the overall significance ranking. Table 8.2 shows that the overwhelming majority of responses -- 109 out of 143 (76%) -- indicate that sites ranked high in significance are currently being affected by

Table 8.1. Perceived Current Effect of DOE/NV Activities on Sites

Site	No	Yes	Total
1A	9	17	26
1B	7	18	25
1C	2	10	12
2A	8	17	25
2B	4	19	23
2C	5	6	11
3A	2	6	8
3B	3	2	5
3C	1	7	8
3D	2	5	7
3E	0	4	4
Total	43	111	154
Total (percent)	27.92%	72.08%	100.00%

Table 8.2. Overall Importance of Sites by Perceived Current Effect of DOE/NV Activities

	"Is this site being affected by DOE/NV activities?"		
Overall Importance of Sites	No	Yes	Total
Low	2	2	4
Medium	7	0	7
High	34	109	143
Total	43	111	154

Future Impact

Table 8.3 tabulates the responses to the question, "Will this site be affected by DOE/NV activities in the future?"

Of the 151 responses to this question, the overwhelming majority (92%) indicate the perception that all of the sites visited will be affected by future DOE/NV activities. Only 8% of the responses to this question were negative (i.e., no future impact).

Table 8.4 shows the tribal responses to the same question cross-tabulated by overall significance ranking. Again, the overwhelming majority of responses demonstrate the perception

that high significance sites will be affected by DOE/NV activities in the future. While a much lower number of sites were judged to be between low and medium significance, the perception is that these sites will be affected by future DOE/NV activities as well.

Clearly, most tribal representatives believe that the sites visited are highly significant. Moreover, they believe these sites are currently being affected by DOE/NV activities, and will continue to be affected by such activities in the future. These perceptions form the basis for providing mitigation recommendations for protecting sites and artifacts. These recommendations are discussed below.

Mitigation Recommendations

At the end of each ethnoarchaeology interview, each representative was asked, "What would be your first recommendation for protecting this site?" Representatives were then asked, "If this site and its features cannot be preserved in place, what would you recommend in order to best protect these things?" Analysis of the recommendation statements allows two broad categories of mitigation: (1) protect-in-place recommendations, and (2) remove-and-curate recommendations.

Protect-in-place recommendations encompass a variety of actions for preserving the site, its features, and artifacts. Specific recommendations include stopping all current and future activities, including underground atomic testing, placing the area off-limits (which involves closing access roads, fencing, flagging, or otherwise marking off site areas to restrict or prevent access), mapping, photographing, videotaping, and otherwise documenting or recording *in situ* all data at a given site.

Remove and curate recommendations encompass a variety of actions for protecting

potentially threatened parts of a site that are probably going to be impacted by some activity. These actions include consultation with involved tribes, removal of artifacts to be curated and

Table 8.3. Perceived Effect of Future DOE/NV Activities on Sites

Site	No	Yes	Total
1A	2	23	25
1B	3	23	26
1C	0	12	12
2A	3	21	24
2B	1	23	24
2C	1	10	11
3A	0	6	6
3B	1	3	4
3C	0	8	8
3D	1	6	7
3E	0	4	4
Total	12	139	151
Total (percent)	8%	92%	100%

Table 8.4: Overall Importance of Sites by Perceived Future Effect of DOE/NV Activities

Overall Importance of Sites	"Will these sites be affected by DOE/NV activities in the future?"		
	No	Yes	Total
Low	1	3	4
Medium	3	4	7
High	8	132	140
Total	12	139	151

First-Choice Recommendations

"First choice" recommendations--those that advocate avoidance or protection of all cultural resources--commonly represent what have been termed "holistic conservation" statements (Stoffle and Evans 1990). Such statements are commonly presented by Indian people as an indication of tribal sovereignty as well as of basic cultural values. A holistic conservation statement usually has two main parts, one that expresses a belief about the integration of

Table 8.5 presents the cross-tabulation of responses to the question, "What would be your first recommendation for protecting this site?" As expected, 95% of the responses fall into the protect-in-place category. Only 5% of the first-choice recommendations are in the remove-and-curate category. Table 8.6 presents the cross-tabulation of ethnic group responses by the question, "What would be your first recommendation for protecting this site?" As with the overall pattern illustrated in Table 8.5, Table 8.6 shows that 94% of Owens Valley Paiute first-choice recommendations are in the protect-in-place recommendation category. Ninety-five percent of Southern Paiute first-choice recommendations, and 100% of Western Shoshone first-choice recommendations, are also in this category.

Clearly, the preference of the involved ethnic groups is that the sites and artifacts visited be protected in place, by whatever means feasible. Sites and artifacts are believed to be the property of their ancestors. The location of artifacts within a site area is believed to have been the result of deliberate and purposeful placement by the Indian people who used them in the past. Consequently, the overriding feeling is that such cultural material should be left undisturbed where it is. Another rationale for this feeling is that the majority of Indian people wish to have access to these remaining ancestral sites in order to bring younger people to them to show them the physical evidence of traditional lifeways and teach them about their cultural history.

Second-Choice Recommendations

Although Indian people tend to resent proposed projects that from their perspective inappropriately use traditional lands, they tend to be realistic about the extent of their power to affect the process and the results of these projects. When provided with an opportunity to have input in the process, Indian people have demonstrated a willingness to try to protect some cultural resources potentially affected by an unwanted project. This process has been termed *cultural triage*, which is defined as a forced-choice situation in which an ethnic group is faced with the decision to rank in importance equally-valued cultural resources that could be affected by a proposed development project (Stoffle and Evans 1990). Cultural triage can be both emotionally taxing for the Indian person and dangerous for the cultural resource (see Stoffle and Evans 1990 for further discussion).

Table 8.5. First Recommendation for Protecting Sites and Artifacts

Site	Protect in place	Remove and curate Artifacts	Total
1A	23	3	26
1B	25	1	26
1C	10	1	11
2A	25	0	25
2B	24	1	25
2C	11	0	11
3A	8	0	8
3B	4	0	4
3C	9	0	9
3D	6	1	7
3E	3	1	4
Total	148	8	156
Total (percent)	94.9%	5.1%	100%

Table 8.6. First Recommendation for Protecting Sites (by Ethnic Group)

		Remove and curate	
	Protect Site in Place	Artifacts	Total
Southern Paiute	61 (95%)	3 (5%)	64
Western Shoshone	31 (100%)	0	31
Owens Valley Paiute	48 (94%)	3 (6%)	51
Pan-tribal Organization	5 (100%)	0	5
Other Indian	3 (60%)	2 (40%)	5
Total	148	8	156
Total (percent)	94.9%	5.1%	100%

Table 8.7 shows the cross-tabulation of responses from the question, "If this site and its features cannot be preserved in place, what would you recommend in order to best protect these things?" Of the 142 responses to this question, 57% remain in the Protect-in-Place category. The prevailing second-choice recommendation for all sites visited continues to be protection in place.

Forty-three percent of responses fell into the remove and curate category. The alternative for protection, in the event a site cannot be protected in place, is to remove the artifacts and other movable items and have them curated or displayed in a repository, preferably tribally-owned and operated. It should be noted that many representatives desired the Indian repository to be located on Indian land in an area mutually agreeable to all of the involved tribes. Otherwise, representatives stated that the repository be located in the vicinity of the NTS, in areas such as Ash Meadows, Death Valley, Las Vegas or even Mercury. If located off Indian land, the repository should, at the very least, be co-managed by DOE/NV and the involved tribes, but in general the preference is that the repository be owned and operated by Indian people on Indian land. Repatriation is frequently implied as a component of removal and curation recommendations.

Table 8.8 cross-tabulates ethnic group responses to the question, "If this site and its features cannot be protected in place, what would you recommend in order to best protect these things?" The table shows that the majority of Owens Valley Paiute (59%) and Western Shoshone (77%) responses remain in the protect-in-place category. Forty-one percent of Owens Valley Paiute and 23% of the Western Shoshone responses fall into the remove-and-curate category. Southern Paiute responses are almost evenly split between the two categories, with 51% remaining in the protect-in-place category, and 49% in the remove-and-curate category.

In summary, the overall response pattern, as well as the ethnic group pattern, suggest that the preferred strategy for protection of archaeological sites and resources in the Pahute and Rainier Mesas study area is preservation or protection in place. Ninety-five percent of recommendation responses indicate this as a first-choice. With regard to alternatives, more than half, or 57%, of responses suggest there is no alternative to protection *in situ*. Less than half (43%) of the responses indicated an alternative of removing movable artifacts and curating them so that other Indian people can see and learn from them.

One rationale for the protection-in-place recommendations is that Indian people prefer to have access to the sites in order to transmit traditional lifeways and cultural history to younger generations. Cultural transmission should occur in an appropriate context. The most appropriate context is on-site, so that people can have intimate interaction with the sites and resources in their environment. Several of the representatives felt that museums or interpretive cultural centers do not provide the overall environmental context in which traditional activities occurred. One cannot point to related

Table 8.7. Second-Choice Recommendation for Protecting Sites and Artifacts

Site	Protect Site in Place	Remove and curate Features/Artifacts	Total
1A	9	16	25
1B	16	7	23
1C	3	8	11
2A	15	7	22
2B	17	8	25
2C	8	1	9
3A	2	5	7
3B	3	1	4
3C	4	3	7
3D	2	3	5
3E	2	2	4
Total	81	61	142
Total (percent)	57%	43%	100%

Table 8.8. Second-Choice Recommendation for Protecting Sites and Artifacts (by Ethnic Group)

	Protect Site in Place	Remove and curate Features/Artifacts	Total
Southern Paiute	32 (51%)	31 (49%)	63
Western Shoshone	24 (77%)	7 (23%)	31
Owens Valley Paiute	23 (59%)	16 (41%)	39
Pan-tribal Organization	2 (40%)	3 (60%)	5
Other Indian	0	4 (100%)	4
Total	81	61	142
Total (percent)	57%	43%	100%

gathering valleys, spring locations, and mountain peaks. Moreover, one cannot teach as much about the role of a firepit, wickiup, pottery, or artifacts such as points, removed from their spatial context in relation to other such features and artifacts present at the site. Associated animals and plants are also absent from view when cultural materials are viewed in a museum

display. In short, archaeological resources cannot be viewed holistically in a museum context. Removal and curation of artifacts thus appears to be only an absolute last resort to protection in place.

Plant Resources

Tribal representatives were asked to provide recommendations for protecting plant resources. Unlike the ethnoarchaeology interviews, respondents were not asked if they perceived that a particular plant was currently being affected by DOE/NV activities. Potential threats to Indian plant resources are nonetheless real and perceived by the Indian people who made the on-site interviews. Most plants are disturbed by ground-disturbing activities associated with land clearing for infrastructure and test shafts in locations slated for underground testing. Indian people also perceived the health of some plants to be influenced by radiation. The plants were perceived as being spiritual impacted by some Indian representatives, who recommended that only with ceremonies could the plants be spiritually renewed.

During the ethnobotany on-site visits, each representative was asked at the end of every plant-specific interview, "What would be your first recommendation for protecting this plant in the study area?" Representatives were then asked, "What would be your second recommendation for protecting this plant?" As with archaeological resources, the recommendations fall into two categories of mitigation: (1) protect-in-place, and (2) transplant/replant.

First-Choice Recommendations

The overwhelming majority of first-choice recommendations regarding plants fall into the protect-in-place category. Table 8.9 presents a tabulation of plant species identified by first-choice recommendations. Of the 246 first-choice responses, 78% (n=196) were in the protect-in-place category. Only 20 first-choice responses (.04%) were in the transplant/replant category. Forty (16%) of the responses offered no recommendation.

Second-Choice Recommendations

A slight majority of the second-choice recommendations regarding plants were in the transplant/replant category. Table 8.10 cross-tabulates plant species by the second-choice mitigation recommendations. Fifty-seven (23%) of the second-choice recommendations were to transplant or replant the plants, while 54 (22%) of the second choice recommendations were to protect the plants in place. Most Indian people (55%) did not suggest a second choice for protecting the plants.

Table 8.9: Species Name by First Recommendation for Protection of Plant

Species Name	Protect In Place	Transplant/Replant	No Recommendation
Artemisia nova	3	0	0
Artemisia tridentata	14	0	2
Calochortus bruneaunis	6	0	1
Castilleja martinii	1	0	0
Ceratoides lanata	1	0	0
Chenopodium fremontii	5	0	0
Chrysothamnus nauseosus	7	0	4
Coryphantha vivipara var. rosea	4	0	0
Eleocharis palustris	4	0	2
Elymus elymoides	0	0	3
Ephedra nevadensis	7	3	1
Ephedra viridis	12	3	2
Eriastrum eremicum	0	0	1
Erodium cicutarium	1	0	0
Euphorbia albomarginata	3	0	0
Gilia inconspicua	2	0	0
Grayia spinosa	1	0	0
Juniperus osteosperma	14	0	1
Lewisia rediviva	1	0	0
Lichen	0	0	3
Mentzelia albicaulis	7	1	1
Mirabilis multiflora	2	0	0
Nicotiana attenuata	4	0	5
Opuntia polycantha	5	1	2
Orobanche corymbosa	5	0	0
Penstemon floridus	0	0	1
Penstemon pahutensis	1	0	1
Pinus monophylla	14	0	2
Purshia mexicana	3	0	1
Purshia tridentata	6	0	0
Quercus gambelii	6	0	1
Rhus aromatica	2	0	0
Ribes cereum	7	0	0
Ribes velutiinum	4	0	2
Rosa woodsii	8	0	1
Salsola iberica	2	0	0
Sisymbrium altissimum	1	0	0
Sphaeralcea ambigua	4	0	0
Stanleya pinnata	10	0	0
Stephanomeria spinosa	0	1	0
Stipa hymenoides	9	1	3
Yucca baccata	10	0	0
Total	196	10	40

Table 8.10: Species Name by Second Recommendation for Protection of Plant

Species Name	Protect In Place	Transplant/Replant	No Recommendation
Artemisia nova	2	1	0
Artemisia tridentata	5	3	8
Calochortus bruneaunis	3	1	3
Castilleja martinii	0	1	0
Ceratoides lanata	1	0	0
Chenopodium fremontii	0	2	3
Chrysothamnus nauseosus	3	2	6
Coryphantha vivipara var. rosea	3	1	0
Eleocharis palustris	2	0	4
Elymus elymoides	0	0	3
Ephedra nevadensis	4	1	6
Ephedra viridis	1	4	12
Eriastrum eremicum	0	0	1
Erodium cicutarium	0	1	0
Euphorbia albomarginata	3	0	0
Gilia inconspicua	0	0	2
Grayia spinosa	0	0	1
Juniperus osteosperma	2	3	10
Lewisia rediviva	0	0	1
Lichen	0	0	3
Mentzelia albicaulis	1	4	4
Mirabilis multiflora	0	2	0
Nicotiana attenuata	2	0	7
Opuntia polycantha	1	4	3
Orobanche corymbosa	2	1	2
Penstemon floridus	0	0	1
Penstemon pahutensis	0	0	2
Pinus monophylla	1	4	11
Purshia mexicana	1	0	3
Purshia tridentata	0	1	5
Quercus gambelii	2	1	4
Rhus aromatica	2	0	0
Ribes cereum	4	0	3
Ribes velutiinum	0	3	3
Rosa woodsii	1	1	7
Salsola iberica	0	0	2
Sisymbrium altissimum	0	0	1
Sphaeralcea ambigua	1	1	2
Stanleya pinnata	2	6	2
Stephanomeria spinosa	0	0	1
Stipa hymenoides	1	7	5
Yucca baccata	4	2	4
Total	54	57	135

Clearly, Indian people prefer that plants be left alone in their natural places within the Pahute and Rainier Mesas study area. Plants are seen as having been placed in their current location by the Creator for human use. Plants should therefore not be removed or disturbed without proper action. Proper behavior varies by the type of plant, but it typically involved talking to or praying to the plant before taking part of it for personal use. Transplanting or replanting is perceived as an alternative to protecting in place by less that 25% of the Indian people.

Animal Recommendations

On-site visits by tribal representatives afforded the opportunity to talk about the meaning of animals and discuss how to protect those animals that were perceived to be potentially impacted by DOE/NV activities. Animal interviews were conducted when an animal or its sign

Table 8.11. Recommendations for Protection of Identified Animals

Animal	Protection Recommendation
Wood Ants	If small isolated nest, leave it. If lots of them, no mitigation necessary.
Bobcat	Leave the place alone, they were here before you. If bobcats were in a canyon and a shot moves the rocks. Major effect on habitat if many/most move; minor/no effect if just a few rocks move.
Cicada	Leave habitat alone. When scrape shallow, no harm, but deep scrape would dig them up.
Cottontail	Leave them alone. Protect by leaving alone. There are hardly any more rabbits, so protect them.
Jackrabbit	Keep in own environment/habitat where they can survive.
Coyote	Protect.
Deer	If it is a deer area, should move away from the area. Just leave them alone, they stay in clean places. Don't cut down pine trees--deer food. Leave the land alone-maybe they will continue to breed and more animals will live. Leave totally undisturbed.
Dove	Leave them where they are and only hunt if need, otherwise leave alone.
Duck	Leave them alone.
Ground Squirrel	Leave habitat alone. Will not have a place to live.
Hummingbird	Leave them alone-not very many of them.
Jackrabbit	Leave it alone. That is our food. Rabbits living around man-impacted areas becoming sick. We go a long way to get to rabbits. Just leave them as they are.
Pine Jay	Do not cut down more pine trees--it is bird's main food. Treat it with respect. Important animal, we believe in it.
Redtail Hawk	Just leave them alone, don't kill them. Not too many more around. Protect the nest from any activity. Should not destroy it.
Rock Wren	Shouldn't do anything that harms them.
Squirrel	Leave them where they are at.

Plants

Apart from the two common recommendations mentioned above, there were also a number of other recommendations specific to each resource. The respondents endorsed leaving plant resources alone and in place as well as protecting similar plants elsewhere. Two new recommendations for protecting plant resources that were gained from the responses to the mail survey included: (1) establishing plant sanctuaries outside of the NTS; and (2) involving Native Americans in decision-making processes that affect plant resources.

Animals

There were numerous recommendations for protecting animal resources on the NTS. These included: (1) relocation to a safer or similar environment outside of the NTS; (2) creating a nature preserve for the animals, birds, and their habitats; (3) monitoring the animals and birds for contamination; and (4) protecting animal habitats.

Sacred Areas

The Indian respondents strongly endorsed making sacred areas off limits and strongly opposed removing sacred items and placing them in a scientific museum. Many respondents indicated that the recommendations that they endorsed were choices that they would make only if ground-disturbing activities were going to continue. Other recommendations included: (1) involving affected Indian tribes in the decision-making and monitoring processes; (2) allowing elders to conduct ceremonies when sacred items are moved; and (3) documenting the sacred places and providing the tribes with the research. There was also some concern among the respondents that if sacred items were left on the NTS that they would be stolen.

Artifacts

The respondents supported making areas with artifacts off-limits. The majority of the respondents were also concerned that the artifacts not be moved from their current locations. The respondents felt that decisions regarding these artifacts should be based on the type of artifact and how it was found. For example, if the artifact was found with a burial they recommended leaving it alone and in place.

Minerals

The recommendations gained from the survey responses regarding mineral resources are listed below. The respondents recommended that clay and rock quarries be kept off-limits to everyone except those Indian people desiring access to the quarries. Other recommendations included fencing off the quarries and preserving them for the use of Indian people.

Water

The responses concerning the protection of water resources reflected a concern with the level of contamination and the suitability of water for human or animal consumption. The respondents strongly expressed their desire that testing be stopped on the NTS. Other recommendations included: making the springs off-limits; rerouting the water away from the contamination so it can be utilized; and checking the springs for contamination and cleaning them if necessary.

Consolidated Group Position Statement

Indian people representing the governments of the 17 involved tribes and Indian organizations met at the NTS on August 1-2, 1993, to review past recommendations and to draft the first official set of recommendations from the tribes to the DOE/NV. At this meeting the representatives decided to refer to themselves as the *consolidated tribes*. At the second mitigation meeting, held October 2-3, 1993, the representatives agreed to change this to *consolidated group*, in order to include the official Indian organizations participating in the study. In addition, recommendations were revised and final versions offered to DOE/NV. The following statement is presented as it was agreed to by the consolidated group at the second meeting.

> We, the People, are the rightful caretakers of the land and have strong cultural and religious ties to the area. We support the promotion of a safe environment. We do not support any DOE activities which destroy or disrupt any part of the ecosystem. All cultural resources should be preserved and protected. Reclamation of disturbed sites should be initiated immediately. As the voice of the People, we, the representatives of the consolidated group, including sovereign tribes and official tribal organizations, strongly recommend that DOE/NV implement the following recommendations.

I. Ethnoarchaeology

A. Artifacts

1. Leave artifacts in place. Any project activity that is located in an area which contains artifacts or an activity that uncovers artifacts by accident must be forwarded to the consolidated group immediately.

2. Information about cultural resource sites must remain confidential unless authorization is expressly given by the consolidated group.

3. Native American monitors shall be used and included in all pre-activity surveys and data recovery programs, and compensated accordingly.

4. Upon location of artifacts, detailed site descriptions/reports must be properly filed and made accessible to the consolidated group upon request.

5. Periodic trips will be scheduled to view sites previously identified during AIRFA compliance program studies to allow additional opportunities for the consolidated group.

6. Arrangements should be made for the consolidated group to view other sites including those in the most isolated areas previously unvisited by consolidated group representatives.

7. All archaeological sites should be avoided and made off limits to all personnel.

8. Tribal representatives will be permitted access to view areas of cultural importance.

9. All disturbed areas must be reclaimed and restored as soon as possible. All left over materials (i.e., wire, pipe, etc.) must be removed from the area and properly stored.

10. Consolidated group representatives must be included to assist environmental restoration teams who are responsible for reclaiming or restoring disturbed sites.

11. Ethnoarchaeology studies should continue in areas where comprehensive studies have not occurred. Consolidated group representatives should continue to be involved and compensated accordingly.

12. A comprehensive overview of archaeological studies and artifacts which have been collected as well as known archaeological sites will be provided to the consolidated group.

13. Arrangements, periodic visits and DOE/NV funding will be made available for consolidated group representatives to view artifacts housed at the Desert Research Institute facility in Reno, Nevada.

14. Prior to removal or replacement of any artifacts, traditional spiritual person(s) designated by the consolidated group will be called upon to bless the area and provide guidance. Appropriate funding will be provided to cover travel expenses and per diem costs.

B. Petroglyphs and Pictographs

1. Petroglyphs and pictographs have been located within the study area. Due to the relatively immovable nature of petroglyphs and pictographs, they along with the area in which they are located, must be avoided and made off limits to all personnel.

2. Comprehensive petroglyph and pictograph studies will be conducted at all known locations. Native American representation will be included and compensated accordingly.

II. Ethnobotany

1. Plant species identified as important to Native American cultures and religions will be avoided and/or protected from all project activities.

2. In the event that a particular type of plant identified as important to Native American cannot be avoided or protected, then the same plant species located elsewhere must be preserved. Native American people must be granted access to this area at any time they choose.

3. If the same type of plants cannot be found, then the plant species must be studied with funding provided by DOE to determine the feasibility of transplanting. If it is determined the plant(s) can be transplanted then further studies should be conducted to insure that the plant species survives in the new location.

4. All information about cultural and religious uses of native plants must be restricted unless express permission is given by the involved consolidated group.

5. Ethnobotany studies will occur in all areas previously unstudied using Native American plant experts. DOE/NV funding and compensation will be provided to consolidated group participants.

6. Prior to removal or replacement of culturally or spiritually significant plant species, a traditional spiritual person(s) designated by tribes will be called upon to bless the area and provide guidance. DOE/NV funding will be provided to cover all travel expenses and per diem costs.

7. Recommend that the Gold Meadows areas and other areas identified by the consolidated group as significant be designated as Native American areas with restricted access. These areas will be made accessible to Native Americans upon request.

8. The consolidated group requests all ethnobotany reports and other plant studies be provided to them upon request and that ethnobotany studies be conducted to provide necessary baseline data.

9. DOE must employ Native American plant experts to provide guidance in revegetation projects.

III. Animals

1. All project activities must be kept away from all animal habitats.

2. Comprehensive animal studies will be conducted in all areas. Native American representatives must be included and compensated accordingly.

3. All contaminated springs, waterholes and other areas which provide water and food sources and can harm the animals must be secured to restrict animal access for their protection.

4. All animals will remain in their original natural habitat and not be relocated.

5. All animals must be protected and not used for any laboratory purposes.

6. Existing photographs and related information on previous animal studies will be sent to the consolidated group for review and consideration for future animal studies.

7. All animal studies must use knowledgeable Native Americans who are compensated accordingly and identified by the tribes.

8. Any areas in which activities are planned must be thoroughly studied prior to any activity.

IV. Sacred Sites

1. Native American representatives have extensive knowledge about religious and/or historic places important to Native American people. Since it is impossible to move a place such as a spring, power spots, etc., these sensitive areas must be completely avoided. Any project activity that is being considered in one of these areas must be moved to a different location so as not to disturb the sacred area.

2. Comprehensive traditional cultural property studies must be conducted in all areas. Native American representatives must be included and compensated accordingly to identify sensitive areas with an appropriate buffer zone and/or easements so access can be restricted.

3. All information provided about sensitive areas by the consolidated group must remain confidential.

V. Burials

1. Native Americans are responsible for all burials of Indian People. Because it is the right and duty of Native American people to make any decision concerning an Indian burial. Upon the location of an Indian burial the consolidated group must be notified immediately so they can inspect the area. DOE/NV will provide the necessary compensation for Native Americans who come onto the site for this purpose. The involved tribal representatives from the consolidated group demand that any burial discovered during project activities be left completely undisturbed with restricted access. Any project activity at that location must be moved to another area.

2. Any information which is provided by the consolidated group must remain confidential.

3. Any objects identified by Indian people as associated with a burial or funeral must be left alone with restricted access.

4. Any objects including human remains associated with a burial or funeral which has been collected or removed from its original location shall be returned immediately to a suitable location designated by the consolidated group.

5. Access must be granted to the consolidated group who wish to participate in cultural ceremonies when returning human remains or associated objects.

6. DOE/NV will take full responsibility for any costs associated with the return and/or reburial.

VII. General Recommendations

1. The consolidated group requests that a comprehensive overview of all archaeological work including detailed descriptions with photographs be provided immediately.

2. DOE/NV will send copies of all future archaeological reports to the consolidated group.

3. A minimum of three Native American monitors must continue to function as working members of archaeological surveys and /or excavation crews. Monitoring activities must be realigned to allow monitors to participate in environmental studies of proposed project activities.

4. DOE/NV must continue to meet with the consolidated group a minimum of twice a year to review proper implementation of the consolidated group recommendations and activities of future meetings.

10. Mitigation must be an on-going process to provide continued input and update from the consolidated group as needed.

11. No articles may be printed about any culturally sensitive areas identified by the consolidated group without the permission of the consolidated group.

These recommendations have been adopted by a consolidated group comprised of representatives from Southern Paiutes, Western Shoshones, and Owens Valley Paiutes through a general consensus. Any revision or updates by DOE/NV must be approved through a general consensus of the consolidated group.

The consolidated group consists of:

Southern Paiutes

Chemehuevi Indian Tribe
Colorado River Indian Tribes
Kaibab Paiute Indian Tribe
Las Vegas Paiute Tribe
Moapa Band of Paiutes
Pahrump Paiute Indian Tribe
Paiute Indian Tribe of Utah

Western Shoshone

Duckwater Shoshone Tribe
Ely Shoshone Tribe
Timbisha Shoshone Tribe
Yomba Shoshone Tribe

Owens Valley Paiutes/Shoshones

Benton Paiute Tribe
Big Pine Paiute Tribe
Bishop Paiute Indian Tribe
Fort Independence Paiute Indian Tribe
Lone Pine Paiute-Shoshone Indian Tribe

Official Indian Organizations

Las Vegas Indian Center
Owens Valley Board of Trustees
Southern Paiute Tribal Chairman's Association

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APPENDIX A:
ETHNOARCHAEOLOGY INTERVIEW FORM

ETHNOARCHAEOLOGICAL INFORMATION
NTS AIRFA COMPLIANCE PROGRAM
UNIVERSITY OF ARIZONA

Date:_____

1. Interview #:_____

Interviewer:_____

2. Respondent's Name: _____

3a. Tribe: _____ 3b. Ethnic Group:_____

[redacted]

5. Site: A) English Name/Description B) Site No.: _____ C) Division No. (if any)_____ D) Subdivision No. (if any)_____

E) Feature No. (if any)_____ F) UTM Coordinates_____

6a. Study Area Site, Name and Number:_____ 6b. Ecozone Location:_____

ETHNIC GROUP USE HISTORY: PAST AND PRESENT
(INTERVIEWER: CIRCLE OR CHECK APPROPRIATE CATEGORY BEFORE MARKING RESPONSE)

7. Did you know that **this site** was here? *1=Yes* *2=No* *8=DK* *9=NR*

8. Did (respondent's ethnic group) traditionally visit or use (**this site / sites like this in southern Nevada**)? *1 = Yes* *2 = No* *8 = DK* *9 = NR*

9. What was/were (**this site / sites like this**) visited or used for?

1 = Permanent Residence *2 = Camping* *3 = Farming* *4 = Ritual / Ceremony*

5 = Gathering Foods *6=Hunting* *7=Trade* *8 = Other (SPECIFY)*

10. Who visited or used (**this site / sites like this**) most often? *1 = Men* *2 = Women* *3 = Both*

11. Do (respondent's ethnic group) currently visit or use (**this site / sites like this**)? *1 = Yes* *2 = No* *8 = DK* *9 = NR*

12. (If yes) What is/are (**this site / sites like this**) visited or used for? CIRCLE BELOW

1 = Permanent Residence *2 = Camping* *3 = Farming* *4 = Ritual / Ceremony*

5 = Gathering Foods *6=Hunting* *7=Trade* *8 = Other (SPECIFY)*

13. Who visits or uses (**this site / sites like this**) most often? *1 = Men* *2 = Women* *3 = Both* *8 = DK* *9 = NR*

PERSONAL USE HISTORY

14. Did you (or your family) traditionally visit or use (this site / sites like this)? *1 = Yes* *2 = No* *8 = DK* *9 = NR*

15. (If yes) What was/were (this site / sites like this) visited or used for? CIRCLE BELOW

1 = Permanent Residence *2 = Camping* *3 = Farming* *4 = Ritual / Ceremony*

5 = Gathering Foods *6=Hunting* *7=Trade* *8 = Other (SPECIFY)*

16. Do you (or your family) currently visit or use (this site / sites like this)? *1 = Yes* *2 = No* *8 = DK* *9 =NR*

17. (If yes) What is/are (this site / sites like this) visited or used for? CIRCLE BELOW

1 = Permanent Residence *2 = Camping* *3 = Farming* *4 = Ritual / Ceremony*

5 = Gathering Foods *6=Hunting* *7=Trade* *8 = Other (SPECIFY)*

CULTURAL TRANSMISSION

18. From whom did you learn about (this site / sites like this)? CIRCLE BELOW

1 = Mother *2 = Father* *3 = Other Relative (Specify)* *4 = Friend, Neighbor, Other Person* *8 = DK* *9 = NR*

19. Have you ever taught anyone about (this site / sites like this)? *1 = Yes* *2 = No* *9 = NR*

20. (IF YES) Who have you taught? (CIRCLE BELOW)

1=Children *2=Grandchildren* *3=Other Relative* *4=Friend, Neighbor* *9=NR*

21. What about (this site / sites like this) were you teaching to that person? (CIRCLE BELOW)

1 = Permanent Residence *2 = Camping* *3 = Farming* *4 = Ritual / Ceremony*

5 = Gathering Foods *6=Hunting* *7=Trade* *8 = Other (SPECIFY)*

22. Are you currently teaching anyone about (this site / sites like this)? *1 = Yes* *2 = No* *9 = NR*

23. (IF YES TO #22) Whom are you teaching? (CIRCLE BELOW)

1=Children *2=Grandchildren* *3=Other Relative* *4=Friend, Neighbor* *9=NR*

24. What about (this site / sites like this) are you teaching to that person? (CIRCLE BELOW)

1 = Permanent Residence *2 = Camping* *3 = Farming* *4 = Ritual / Ceremony*

5 = Gathering Foods *6=Hunting* *7=Trade* *8 = Other (SPECIFY)*

25. Are there Indian stories and legends associated with (this site / sites like this)? *1 = Yes* *2 = No* *8 = DK* *9 = NR*

26. Would (this site / sites like this) be connected with other sites in the area? *1 = Yes* *2 = No* *8 = DK* *9 = NR*

27a. (IF YES TO #26) What kinds of sites?

27b. How are they connected?

(ETHNOGRAPHER: READ THE FOLLOWING LINE BEFORE ASKING QUESTION #28)
Archaeologists use the term <u>feature</u> to describe parts of a site that have different uses. Given this use of the term...

28. What kinds of (above ground) features do you see at this site? (LIST ITEMS ELICITED)

29. Were all of these features used at the same time by the same Indian people, or at different times by other Indian people? (CIRCLE BELOW)

1=Same time/people *2=Different times/people* *8=DK* *9=NR*

30. (IF DIFFERENT TO #29) What other Indian people used these features and when did they use them ([*before, after, same time as*] respondent's ethnic group)?

1=Before *2=After* *3=Same time as* *What people? (Write Below)* *8=DK* *9=NR*

31. What features below the ground do you think might be present at this site? (LIST ITEMS ELICITED)

SITE FEATURES

32. How would you evaluate the importance of the features of this site to (respondent's ethnic group/tribe) people?
(INTERVIEWER: WHEN ASKING QUESTION, SPECIFY FEATURES FIRST, CHECK IF PRESENT AND ELICIT SCORE FOR EACH ONE)

	PRESENCE		SIGNIFICANCE		
	1 = NO	2 = YES	1=LOW	2=MEDIUM	3=HIGH
a. LOCATION					
b. VIEW/AESTHETICS					
c. WATER/SPRING					
d. TINAJAS/TANKS					
e. PLANTS (SPECIFY)					
f. ANIMALS (SPECIFY)					
g. NATURAL RAW MATERIALS (Toolstone,clay, etc.)					
h. MINERALS					
i. BURIAL(S)					
j. STONE STRUCTURES					
k. WOOD/BRUSH STRUCTURES (Wickiup, windbreak)					
l. HEARTH/FIREPIT					

32. CONT'D

	PRESENCE		SIGNIFICANCE			
	1 = NO	2 = YES	1=LOW	2=MEDIUM	3=HIGH	
m. ROCK SHELTER						
n. ROCK RINGS/ ALIGNMENTS						
o. STONE ARTIFACTS (Points,scrapers,flakes, chipped stone, etc.)						
p. GROUNDSTONE (Manos,metates,etc.)						
q. FIBER ARTIFACTS (basketry, etc.)						
r. WOODEN ARTIFACTS (Arrows, digging stick, etc.)						
s. TRAIL						
t. PETROGLYPHS (PICTOGRAPHS)						
u. CERAMICS (SPECIFY)						
v. LITHIC SCATTER/DEBITAGE (Flakes)						
w. OTHER (SPECIFY)						

SEASONALITY AND USE

33. When or at what time of year is/would have this site and its features been visited/used?

KEY:	1 JAN	2 FEB	3 MAR	4 APR	5 MAY	6 JUN	7 JUL	8 AUG	9 SEP	10 OCT	11 NOV	12 DEC	13 ALL YR	COMMENTS
FEATURES														
a. LOCATION														
b. VIEW/AESTHETICS														
c. WATER/SPRING														
d. TINAJAS/TANKS														
e. PLANTS (SPECIFY)														
f. ANIMALS (SPECIFY)														
g. NATURAL RAW MATERIALS (Toolstone,clay, etc.)														
h. MINERALS														
i. BURIAL(S)														
j. STONE STRUCTURES														
k. WOOD/BRUSH STRUCTURES (Wickiup, windbreak)														
l. HEARTH/FIREPIT														

33. CONT'D

KEY:	1 JAN	2 FEB	3 MAR	4 APR	5 MAY	6 JUN	7 JUL	8 AUG	9 SEP	10 OCT	11 NOV	12 DEC	13 ALL YR	COMMENTS
m. ROCK SHELTER														
n. ROCK RINGS/ ALIGNMENTS														
o. STONE ARTIFACTS (Points,scrapers,flakes, chipped stone, etc.)														
p. GROUNDSTONE (Manos,metates,etc.)														
q. FIBER ARTIFACTS (basketry, etc.)														
r. WOODEN ARTIFACTS (Arrows, digging stick, etc.)														
s. TRAIL														
t. PETROGLYPHS (PICTOGRAPHS)														
u. CERAMICS (SPECIFY)														
v. LITHIC SCATTER, DEBITAGE (Flakes)														
w. OTHER (SPECIFY)														

34. Would (this site / sites like this) and the features have been used every year during the same season? *1 = Yes* *2 = No* *8 = DK* *9 = NR*

35. Can you tell me anything else about the importance of (this site / sites like this) to the (respondent's ethnic group/tribe) people?

36. How would you evaluate the overall importance of (this site / sites like this) to Indian people? *1 = Low* *2 = Medium* *3 = High* *9 = NR*

37. What are the elements (artifacts, features, location) of this site that led you to your evaluation?

38. In your opinion, is this site currently being affected by DOE activities? *1 = Yes* *2 = No* *8 = DK* *9 = NR*

39. (IF YES TO #38) How is this site being affected?

40. In your opinion, will this site be affected by DOE activities in the future? *1 = Yes* *2 = No* *8 = DK* *9 = NR*

41. (IF YES TO #40) How do you think this site will be affected?

42. What would be your first recommendation for protecting this site?

43. If this site and its features cannot be preserved in place, what would you recommend in order to best protect these things?

ADDITIONAL NOTES:

APPENDIX B:
ETHNOBOTANY INTERVIEW FORM

ETHNOBOTANICAL INFORMATION
NTS AIRFA COMPLIANCE PROGRAM
UNIVERSITY OF ARIZONA

Date:_____

1. Interview #:_____

Interviewer:_____

2. Respondent's Name: _____

3a. Tribe: _____ 3b. Ethnic Group:_____

4. Gender: (Circle) *1 = M* *2 = F*

5.PLANT SPECIMEN: A) Common Name B) Indian Name C) Botanical Name D) Plant Collection #:_____

6. (Check) IID:____ OID:____ EBID:____

7. Study Area Site:_____ 8. Ecozone Location:_____

ETHNIC GROUP USE HISTORY: PAST AND PRESENT

8. Did (respondent's ethnic group) traditionally use this plant? (Circle) *1 = Yes* *2 = No* *3 = DK* *9 = NR*

9. What was this plant used for? (CIRCLE BELOW)

1 = Food *2 = Medicine* *3 = Ritual / Ceremony* *4 = Construction* *5 = Fuel* *6 = Other (SPECIFY)*

10. Who used this plant most often? *1 = Men* *2 = Women* *3 = Both*

11. Do (respondent's ethnic group) currently use this plant? *1 = Yes* *2 = No* *3 = DK* *9 = NR*

12. (If yes) What is this plant used for? CIRCLE BELOW

1 = Food *2 = Medicine* *3 = Ritual / Ceremony* *4 = Construction* *5 = Fuel* *6 = Other (SPECIFY)*

13. Who uses this plant most often? *1 = Men* *2 = Women* *3 = Both* *4 = DK* *9 = NR*

PERSONAL USE HISTORY

14. Did you (or your family) traditionally use this plant? *1 = Yes* *2 = No* *3 = DK* *9 = NR*

15. (If yes) What was this plant used for? CIRCLE BELOW

1 = Food *2 = Medicine* *3 = Ritual / Ceremony* *4 = Construction* *5 = Fuel* *6 = Other (SPECIFY)*

16. Do you (or your family) currently use this plant? *1 = Yes* *2 = No* *3 = DK* *9 =NR*

17. (If yes) What is this plant used for? CIRCLE BELOW

1 = Food *2 = Medicine* *3 = Ritual / Ceremony* *4 = Construction* *5 = Fuel* *6 = Other*

CULTURAL TRANSMISSION

18. From whom did you learn about this plant? CIRCLE BELOW

1 = Mother *2 = Father* *3 = Other Relative (Specify)* *4 = Friend, Neighbor, Other Person* *5 = DR* *9 = NR*

19. Have you ever taught anyone about the use(s) of this particular plant? *1 = Yes* *2 = No* *9 = NR*

20. (IF YES) Who have you taught? *1=Children* *2=Grandchildren* *3=Other Relative* *4=Friend, Neighbor* *9=NR*

21. What uses of this plant were you teaching to that person? (CIRCLE BELOW)

1 = Food *2 = Medicine* *3 = Ritual / Ceremony* *4 = Construction* *5 = Other* *9 = NR*

22. Are you currently teaching anyone about the use(s) of this particular plant? *1 = Yes* *2 = No* *9 = NR*

23. (IF YES TO #22) Whom are you teaching? *1=Children* *2=Grandchildren* *3=Other Relative* *4=Friend, Neighbor* *9=NR*

24. What uses of this plant are you teaching to that person? (CIRCLE BELOW)

1 = Food *2 = Medicine* *3 = Ritual / Ceremony* *4 = Construction* *5 = Other* *9 = NR*

PLANT PART(S) USED

25. What were/are the parts of this plant used for?

(INTERVIEWER: WHEN ASKING QUESTION, SPECIFY PLANT PARTS FIRST, THEN USES FOR EACH ONE)

USED FOR? YES=1 NO=2 DK=3 NR=9

PARTS USED	1 FOOD	2 MEDICINE	3 RITUAL / CEREMONY	4 CONSTRUCTION	5 FUEL	6 OTHER	COMMENTS
a. YOUNG SHOOTS							
b. STEMS							
c. LEAVES							
d. FLOWERS							
e. FRUIT,BERRY							
f. SEEDS,NUTS							
g. BARK							
h. SAP							
i. WOOD							
j. ROOTS							
k. BULBS							
l. TUBERS							

SEASONALITY, HARVEST AND USE

26. When were/are these parts harvested and used?

H=HARVEST
U=USE

	KEY:	1 JAN	2 FEB	3 MAR	4 APR	5 MAY	6 JUN	7 JUL	8 AUG	9 SEP	10 OCT	11 NOV	12 DEC	13 ALL YR	COMMENTS
a. YOUNG SHOOTS	H														
	U														
b. STEMS	H														
	U														
c. LEAVES	H														
	U														
d. FLOWERS	H														
	U														
e. FRUITS	H														
	U														
f. SEEDS,NUTS	H														
	U														
g. BARK	H														
	U														
h. SAP	H														
	U														
i. WOOD	H														
	U														
j. ROOTS	H														
	U														
k. BULBS	H														
	U														
l. TUBERS	H														
	U														

27. How often do you gather this plant? (CIRCLE BELOW)

1 = Daily *2 = Weekly* *3 = Monthly* *4 = Seasonally* *5 = Yearly* *6 = DK* *9 = NR* COMMENTS

28. How do you harvest these parts?	*1 = Gathered*	*2 = Dug Up*	*3 = Cut/trimmed*	*4 = Other*	COMMENTS
a. YOUNG SHOOTS					
b. STEMS					
c. LEAVES					
d. FLOWERS					
e. FRUIT,BERRY					
f. SEEDS,NUTS					
g. BARK					
h. SAP					
i. WOOD					
j. ROOTS					
k. BULBS					
l. TUBERS					

29. Does this plant grow every year during the same season? *1 = Yes* *2 = No* *3 = DK* *9 = NR*

PREPARATION METHODS

30. How are these plant parts prepared?

	1=Eaten Raw	2=Beat / Winnow Seed	3=Mash / Grind	4=Boil	5=Fry	6=Roast	7=Dry	8=Soak	9=Peel	COMMENTS
a.YOUNG SHOOTS										
b. STEMS										
c. LEAVES										
d. FLOWERS										
e. FRUIT, BERRY										
f. SEEDS, NUTS										
g. BARK										

MANAGEMENT TECHNIQUES

32. Do you (or does anyone) try to get more of these plants to grow? *1 = Yes* *2 = No* *3 = DK* *9 = NR*

33. (IF YES) How do people try to grow or harvest this plant so it grows next year?

	TECHNIQUES				
	EGT	*EGC*	*PP*	*PC*	COMMENTS
a. SELECT, STORE SEEDS					
b. PLANT SEEDS ELSEWHERE					
c. BROADCAST SEEDS					
d. TRANSPLANT CUTTING(S)					
e. CULTIVATE					
f. HAND WATER / POT IRRIGATE					
g. WEED AROUND PLANT					
h. PRUNING					
i. BURNING WITH FIRE TO STIMULATE REGROWTH					

34. (If transplanted) From where to where?

35. (If collected) Where do you find this plant most frequently?

36. When you collect this plant, do you take all the plants in the area or do you leave some for later use? (ETHNOGRAPHER: Try to elicit some sense of quantity)

37. Can you tell me anything else about this plant and its importance for the (respondent's ethnic group/tribe) people?

38. What would be your first recommendation for protecting this plant in the study area?

39. What would be your second recommendation for protecting this plant?

ADDITIONAL NOTES:

APPENDIX C:
ANIMAL INTERVIEW FORM

ETHNOBIOLOGICAL INFORMATION
NTS AIRFA COMPLIANCE PROGRAM
UNIVERSITY OF ARIZONA

1. Interview #:_____

Date:_____

Interviewer:_____

2. Respondent's Name: _____

3a. Tribe: _____ 3b. Ethnic Group:_____

4. Gender: (Circle) *1 = M* *2 = F*

5.ANIMAL SPECIMEN: A) Common Name B) Indian Name C) Scientific Name

6. (Check) IID:____ OID:____ EID:____

7a. Study Area Site:_____ 7b. Ecozone Location:_____

ETHNIC GROUP USE HISTORY: PAST AND PRESENT

8. Did (respondent's ethnic group) traditionally use this animal? (Circle) *1 = Yes* *2 = No* *3 = DK* *9 = NR*

9. What was this animal used for? (CIRCLE BELOW)

1 = Food *2 = Medicine* *3 = Ritual / Ceremony* *4 = Clothing* *5=Tools(Bone)* *6=Other (SPECIFY)*

10. Who used this animal most often? *1 = Men* *2 = Women* *3 = Both*

11. Do (respondent's ethnic group) currently use this animal? *1 = Yes* *2 = No* *3 = DK* *9 = NR*

12. (If yes) What is this animal used for? CIRCLE BELOW

1 = Food *2 = Medicine* *3 = Ritual / Ceremony* *4 = Clothing* *5 = Tools(Bone)* *6 = Other (SPECIFY)*

13. Who uses this animal most often? *1 = Men* *2 = Women* *3 = Both* *4 = DK* *9 = NR*

PERSONAL USE HISTORY

14. Did you (or your family) traditionally use this animal? *1 = Yes* *2 = No* *3 = DK* *9 = NR*

15. (If yes) What was this animal used for? CIRCLE BELOW

1 = Food *2 = Medicine* *3 = Ritual / Ceremony* *4 = Clothing* *5 = Tools(Bone)* *6 = Other (SPECIFY)*

16. Do you (or your family) currently use this animal? *1 = Yes* *2 = No* *3 = DK* *9 =NR*

17. (If yes) What is this animal used for? CIRCLE BELOW

1 = Food *2 = Medicine* *3 = Ritual / Ceremony* *4 = Clothing* *5 = Tools* *6 = Other*

CULTURAL TRANSMISSION

18. From whom did you learn about this animal? CIRCLE BELOW

1 = Mother *2 = Father* *3 = Other Relative (Specify)* *4 = Friend, Neighbor* *5 = Other Person* *6 = DR* *9 = NR*

19. Have you ever taught anyone about the use(s) of this particular animal? *1 = Yes* *2 = No* *9 = NR*

20. (IF YES) Who have you taught? *1=Children* *2=Grandchildren* *3=Other Relative* *4=Friend, Neighbor* *9=NR*

21. What uses of this animal were you teaching to that person? (CIRCLE BELOW)

1 = Food *2 = Medicine* *3 = Ritual / Ceremony* *4 = Clothing* *5 = Tools* *6=Other* *9 = NR*

22. Are you currently teaching anyone about the use(s) of this particular animal? *1 = Yes* *2 = No* *9 = NR*

23. (IF YES TO #22) Whom are you teaching? *1=Children* *2=Grandchildren* *3=Other Relative* *4=Friend, Neighbor* *9=NR*

24. What uses of this animal are you teaching to that person? (CIRCLE BELOW)

1 = Food *2 = Medicine* *3 = Ritual / Ceremony* *4 = Clothing* *5 = Tools* *9 = NR*

ANIMAL PART(S) USED

25. What are the parts of this animal used for?

(INTERVIEWER: WHEN ASKING QUESTION, SPECIFY PARTS FIRST, THEN USES FOR EACH ONE)

USED FOR? YES=1 NO=2 DK=3 NR=9

PARTS USED	*1 FOOD*	*2 MEDICINE*	*3 RITUAL / CEREMONY*	*4 CLOTHING*	*5 TOOLS*	*6 OTHER*	COMMENTS
a.MEAT							
b. SKIN/HIDE/FUR							
c. BONES							
d. FEATHERS							
e. CLAWS							
f. SHELL							
g. TEETH							
h. FEET							
i. TAILS							

(CONTINUED NEXT PAGE)

PARTS USED	*FOOD*	*MEDICINE*	*RITUAL / CEREMONY*	*CLOTHING*	*TOOLS*	*OTHER*	COMMENTS
j. HORNS							
k. *ANTLERS*							
l. BEAK							
m. RATTLE							
n. BLOOD							
o. OIL/FAT							
p. SINEW							
q. FECES							
r. INTERNAL ORGANS (E.G., LIVER)							

SEASONALITY, HARVEST AND USE

26. When are these parts harvested and used?

H=HARVEST
U=USE

KEY:	1 JAN	2 FEB	3 MAR	4 APR	5 MAY	6 JUN	7 JUL	8 AUG	9 SEP	10 OCT	11 NOV	12 DEC	13
a. MEAT H													
U													
b. SKIN/HIDES/FUR H													
U													
c. BONES H													
U													
d. FEATHERS H													
U													
e. CLAWS H													
U													
f. SHELLS H													
U													
g. FEET H													
U													
h. TEETH H													
U													

H=HARVEST
U=USE

	KEY:	*1 JAN*	*2 FEB*	*3 MAR*	*4 APR*	*5 MAY*	*6 JUN*	*7 JUL*	*8 AUG*	*9 SEP*	*10 OCT*	*11 NOV*	*12 DEC*	*13 ALL YR*	COMMENTS
j. HORNS	H														
	U														
k.ANTLERS	H														
	U														
l. BEAK	H														
	U														
m. RATTLE	H														
	U														
n. BLOOD	H														
	U														
o. OIL/FAT	H														
	U														
p. SINEW	H														
	U														
q. FECES	H														
	U														
r. INTERNAL ORGANS (LIVER)	H														
	U														

27. How often do you gather this animal? (CIRCLE BELOW)

1 = Daily *2 = Weekly* *3 = Monthly* *4 = Seasonally* *5 = Yearly* *6 = DK* *9 = NR* COMMENTS

28. How do you harvest these parts?	*1 = Hunted*	*2 = Trapped*	*3 = Gathered*	*4 = Other*	COMMENTS
a. MEAT					
b. SKIN/HIDE/FUR					
c. BONES					
d. FEATHERS					
e. CLAWS					
f. SHELL					
g. FEET					
h. TEETH					
i. TAIL					

(CONTINUED NEXT PAGE)

	1 = Hunted	*2 = Trapped*	*3 = Gathered*	*4 = Other*	COMMENTS
j. HORNS					
k. ANTLERS					
l. BEAK					
m. RATTLE					
n. BLOOD					
o. OIL/FAT					
p. SINEW					
q. FECES					
r. INTERNAL ORGANS (LIVER)					

29. Is this animal present every year during the same season? *1 = Yes* *2 = No* *3 = DK* *9 = NR*

MANAGEMENT TECHNIQUES

30. Do you (or does anyone) try to increase the number of these animals? *1 = Yes* *2 = No* *3 = DK* *9 = NR*

31. (IF YES) How do people try to increase the number of this animal?

	TECHNIQUES				
	EGT	*EGC*	*PP*	*PC*	COMMENTS
a. Burn grass to attract more animals					
b. Breed animals in captivity					
c. Plant food plants for animals					
d. Clean and cover tinajas					
e. Other (SPECIFY)					

32. Where do you find this animal most frequently?

33. (IF HUNTED) When you hunt this animal, do you take all of the animals in the area or do you leave some for later use? (ETHNOGRAPHER: Try to elicit some sense of quantity)

PREPARATION METHODS

34. How are these animal parts prepared?

	1=Eaten Raw	2=Mash / Grind	3=Boil	4=Fry	5=Roast	6=Dry	7=Tanning	COMMENTS
a. MEAT								
b. SKIN/HIDE/FUR								
c. BONES								
d. FEATHERS								
e. CLAWS								
f. SHELL								
g. FEET								
h. TEETH								
i. TAIL								

(CONTINUED NEXT PAGE)

	1=Eaten Raw	2=Mash / Grind	3=Boil	4=Fry	5=Roast	6=Dry	7=Tanning	COMMENTS
j. HORNS								

36. Can you tell me anything else about this animal and its importance for the (respondent's ethnic group/tribe) people?

37. What would be your first recommendation for protecting this animal in the study area?

38. What would be your second recommendation for protecting this animal?

ADDITIONAL NOTES:

APPENDIX D:
MAIL SURVEY INSTRUMENT

Mail Survey Questionnaire:
NTS-AIRFA Compliance Program
University of Arizona

The American Indian Religious Freedom Act (AIRFA) requires federal agencies to consult with Indian people in order to create programs that protect the rights of Indian people to practice their religion. This questionnaire is being sent to tribal members, as part of the Nevada Test Site AIRFA Compliance Program. The purpose of the questionnaire is to learn how Indian people feel about cultural resources that might be affected by ground disturbing activities at the Nevada Test Site (NTS). *Ground-disturbing activities* occur when, for example, heavy equipment such as bulldozers and back-hoes scrape the ground, and when underground nuclear tests are conducted.

Depending on the type of question, please write your response in the appropriate space or place an X in the appropriate circle.

General:

1. How do you as an Indian person feel about traditional lands?

_____

_____

2. Do you as an Indian person wish to visit or have access to traditional lands?

Yes ( ) No ( )

3. How do you as an Indian person feel about ground-disturbing activities associated with lands found at the Nevada Test Site?

_____

_____

Plant Resources:

4. How unimportant or important to you and your family are plants like

	Unimportant	Somewhat Unimportant	Somewhat Important	Very Important	No Opinion
(a) basket plants?	( )	( )	( )	( )	( )
(b) medicine plants?	( )	( )	( )	( )	( )
(c) food plants?	( )	( )	( )	( )	( )
(d) ritual/ceremony plants?	( )	( )	( )	( )	( )
(e) fuel plants?	( )	( )	( )	( )	( )

5. Do you or any member of your family currently use

(a) basket plants?	Yes ( )	No ( )
(b) medicine plants?	Yes ( )	No ( )
(c) food plants?	Yes ( )	No ( )
(d) ritual/ceremony plants?	Yes ( )	No ( )
(e) fuel plants?	Yes ( )	No ( )

6. Sometimes plants on the Nevada Test Site are destroyed by ground-disturbing activities. What do you think about the following ideas for protecting these plants?

		Bad Idea	Fair Idea	Good Idea	No Opinion
(a)	leave in place	( )	( )	( )	( )
(b)	protect similar plants elsewhere	( )	( )	( )	( )
(c)	transplant to a similar environment	( )	( )	( )	( )
(d)	collect seeds, replant later	( )	( )	( )	( )
(e)	other recommendations				

_____

_____

Animal Resources:

7. How unimportant or important are wild animals including birds to you and your family?

Unimportant	( )
Somewhat Unimportant	( )
Somewhat Important	( )
Very Important	( )
No Opinion	( )

8. Do you or any member of your family currently make use of wild animals including birds?

Yes ( ) No ( )

9. What kinds of wild animals including birds are you using?

_____

_____

10. Sometimes animals including birds on the Nevada Test Site are affected by ground-disturbing activities. What recommendations do you have to protect wild animals including birds found at the Nevada Test Site?

_____

_____

Sacred Places (Burials, Shrines, Religious Areas):

11. How unimportant or important are sacred places to you and your family?

Unimportant	( )
Somewhat Unimportant	( )
Somewhat Important	( )
Very Important	( )
No Opinion	( )

12. Do you or any member of your family currently visit sacred places?

Yes ( ) No ( )

13. Do you or any member of you family wish to visit sacred places found at the Nevada Test Site?

Yes ( ) No ( )

14. What are the reasons for your answer to Question #13?

_____

_____

15. Sometimes sacred areas (burials, shrines, religious areas) on the Nevada Test Site are affected by ground-disturbing activities. What do you think about the following ideas for protecting sacred areas at the Nevada Test Site?

		Bad Idea	Fair Idea	Good Idea	No Opinion
(a)	conduct ceremonies before ground disturbing activity	( )	( )	( )	( )
(b)	leave in place	( )	( )	( )	( )
(c)	make area off limits	( )	( )	( )	( )
(d)	remove sacred items and place in a scientific museum	( )	( )	( )	( )
(e)	remove sacred items and place in a tribal museum or cultural center	( )	( )	( )	( )
(f)	remove sacred items and return to appropriate tribe	( )	( )	( )	( )
(g)	other recommendations _____				

_____

Artifacts:

16. How unimportant or important are Native American artifacts to you and your family?

Unimportant	( )
Somewhat Unimportant	( )
Somewhat Important	( )
Very Important	( )
No Opinion	( )

17. Do you or any member of your family currently visit sites containing Native American artifacts?

Yes ( ) No ( )

18. Sometimes artifacts on the Nevada Test Site are affected by ground-disturbing activities. What do you think about the following ideas for protecting these artifacts?

		Bad Idea	Fair Idea	Good Idea	No Opinion
(a)	leave artifacts in place	( )	( )	( )	( )
(b)	make area off limits	( )	( )	( )	( )
(c)	remove artifacts and place in a scientific museum	( )	( )	( )	( )
(d)	remove artifacts and place in a tribal museum or cultural center	( )	( )	( )	( )
(e)	remove artifacts and return to appropriate tribe	( )	( )	( )	( )
(f)	other recommendations _____				

_____

Mineral Resources:

19. How unimportant or important are clay or rock quarries to you and your family?

Unimportant	( )
Somewhat Unimportant	( )
Somewhat Important	( )
Very Important	( )
No Opinion	( )

20. Do you or any member of your family currently use clay or rocks from quarries?

Yes ( ) No ( )

21. Sometimes clay or rock quarries on the Nevada Test Site are affected by ground-disturbing activities. What recommendations do you have to protect clay or rock quarries found at the Nevada Test Site?

_____

_____

Water Resources:

22. How unimportant or important are springs to you and your family?

Unimportant	( )
Somewhat Unimportant	( )
Somewhat Important	( )
Very Important	( )
No Opinion	( )

23. Do you or any member of your family currently use springs?

Yes ( ) No ( )

24. Sometimes springs on the Nevada Test Site are affected by ground-disturbing activities. What recommendations do you have to protect springs found at the Nevada Test Site?

_____

_____

Personal History:

25. Age: _____ 26. Sex: Male____ Female____

28. Do you currently live

on a reservation ( ) off a reservation ( )

29. How long have you lived in the area you now live in? _____

30. Do your parents or any family member live in the same area that you now live in?

Yes ( ) No ( )

31. If no, do they currently live

on a reservation ( ) off a reservation ( )

APPENDIX E
NATIVE AMERICAN PLANT SPECIES CHECKLIST

NATIVE AMERICAN PLANT SPECIES CHECKLIST

SCIENTIFIC NAME	COMMON NAME	Present	Not Present	No Information
Amelanchier utahensis	serviceberry			
Amsinckia tesselata	fiddleneck			
Anemopsis californica	yerba mansa			
Arabis pulchra	wild mustard			
Artemisia ludoviciana	black sagebrush			
Artemisia nova	black sagebrush			
Artemisia tridentata	big sagebrush			
Atriplex canescens	four-winged saltbush			
Atriplex confertifolia	shadscale			
Brodiaea pulchella	desert hyacinth			
Calochortus bruneaunis	sego lily			
Calochortus flexuosus	mariposa lily			
Castilleja chromosa	Indian paintbrush			
Castilleja martinii	narrowleaf paintbrush			
Ceratoides lanata	winterfat			
Chenopodium fremontii	Fremont goosefoot			
Chrysothamnus nauseosus	rabbitbrush			
Cirsium mohavense	desert thistle			
Coleogyne ramosissima	blackbrush			
Coryphantha vivipara var. *desertii*	fishhook cactus			
Coryphantha vivipara var. *rosea*	foxtail cactus			
Datura meteloides	jimsonweed			
Delphinium parishii	larkspur			
Descurainia pinnata	tansy mustard			
Descurainia sophia	tansy mustard			
Distichlis spicata	saltgrass			

SCIENTIFIC NAME	COMMON NAME	Present	Not Present	No Information
Echinocactus polycephalus	cotton-top cactus			
Echinocereus englemannii	hedge hog cactus			
Eleocharis palustris	spikerush			
Elymus elymoides	squirrel tail			
Encelia virginensis var. *actonii*	brittlebush			
Ephedra nevadensis	Indian tea			
Ephedra viridis	Indian tea			
Eriastrum eremicum	desert eriastrum			
Eriogonum inflatum	desert trumpet			
Erodium cicutarium	herringbill			
Euphorbia albomarginata	rattlesnake weed			
Geastrum sp.	earthstar			
Gilia inconspicua	gilia			
Grayia spinosa	spiny hop sage			
Gutierrezia microcephala	matchweed			
Juncus mexicanus	wiregrass			
Juniperus osteosperma	juniper, cedar			
Krameria parvifolia	range ratany			
Larrea tridentata	creosote bush, greasewood			
Lewisia rediviva	bitter root			
Lichen	lichen			
Lycium andersonii	wolfberry			
Lycium pallidum	wolfberry			
Menodora spinescens	spiny menodora			
Mentzelia albicaulis	desert corsage			
Mirabilis multiflora	four o'clock			
Nicotiana attenuata	coyote tobacco			
Nicotiana trigonophylla	Indian tobacco			

SCIENTIFIC NAME	COMMON NAME	Present	Not Present	No Information
Opuntia basilaris	beavertail cactus			
Opuntia echinocarpa	golden cholla cacctus			
Opuntia erinacea	Mojave prickly pear			
Opuntia polycantha	grizzly bear cactus			
Orobanche corymbosa	broomrape, wild asparagus			
Oryzopsis (Stipa) hymenoides	Indian ricegrass			
Penstemon floridus	Panamint beard tongue			
Penstemon pahutensis	Pahute beard tongue			
Peraphyllum ramosissimum	squawapple			
Phragmites australis	cane, reed			
Pinus monophylla	pinyon pine			
Prosopis glandulosa	mesquite			
Prosopis pubescens	screwbean			
Psorothamnus polydenius	dotted dalea			
Purshia glandulosa	buckbrush			
Purshia mexicana	cliffrose			
Purshia tridentata	buckbrush			
Quercus gambelii	scrub oak			
Rhus aromatica	skunkbush, sumac			
Rhus trilobata	squawbush			
Ribes cereum	white squaw currant			

SCIENTIFIC NAME	COMMON NAME	Present	Not Present	No Information
Sisymbrium altissimum	tumbling mustard			
Sphaeralcea ambigua	globe mallow			
Stanleya pinnata	Indian spinach			
Stephanomeria sp. spinosa	spiny wire lettuce, "gum bush"			
Stipa speciosa	bunchgrass			
Streptanthella longirostris	wild mustard			
Streptanthus cordatus	wild mustard			
Suaeda torreyana	seepweed			
Symphoricarpos longiflorus	snowberry			
Tessaria sericeae	arrowweed			
Thamnosma montana	turpentine bush			
Thelypodium integrifolium	wild cabbage			
Typha domingensis	cattail			
Typha latifolia	cattail			
Veronica anagallis-aquatica	speedwell			
Vitis arizonica	wild grape			
Xylorhiza tortifolia	desert aster			
Yucca baccata	banana yucca			
Yucca brevifolia	Joshua tree			
Yucca schidigera	Mojave yucca, Spanish bayonet			

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